National Library
of Canada

Bibliothèque nationale
du Canada

Canadian Theses Service

Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL 339 (r. 86/01)

Canada

161

National Library of Canada
Bibliothèque nationale du Canada

Ottawa, Canada
K1A 0N4

TC –

IS 0-315-23358-3

CANADIAN THESES ON MICROFICHE SERVICE – SERVICE DES THÈSES CANADIENNES SUR MICROFICHE

PERMISION TO MICROFILM – AUTORISATION DE MICROFILMER

- Please print or type – Écrire en lettres moulées ou dactylographier

AUTHOR – AUTEUR

Full Name of Author – Nom complet de l'auteur

TIMOTHY GLEN TRYTTEN

Date of Birth – Date de naissance

June 18, 1958

Canadian Citizen – Citoyen canadien

☑ Yes / Oui ☐ No / Non

Country of Birth – Lieu de naissance

Canada

Permanent Address – Résidence fixe

32 BEAUVISTA DRIVE
SHERWOOD PARK, ALBERTA
T8A 3M5

THESIS – THÈSE

Title of Thesis – Titre de la thèse

The Impact of Task Characteristics on Job Satisfaction: A Comparison of Letter Carriers and Automated Letter-Sorters in the Post Office.

Degree for which thesis was presented – Grade pour lequel cette thèse fut présentée

MASTER OF ARTS

Year this degree conferred – Année d'obtention de ce grade

1985

University – Université

UNIVERSITY OF ALBERTA

Name of Supervisor – Nom du directeur de thèse

DR. G. S. LOWE

AUTHORIZATION – AUTORISATION

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to **microfilm** this thesis and to **lend** or **sell copies of the film.**

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de **microfilmer** cette thèse et de **prêter** ou de **vendre des exemplaires du film.**

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

ATTACH FORM TO THESIS – VEUILLEZ JOINDRE CE FORMULAIRE À LA THÈSE

Signature

Trytten T

Date

July 31/1985

NL-91 (r. 84/03)

Canada

THE UNIVERSITY OF ALBERTA

THE IMPACT OF TASK CHARACTERISTICS ON JOB SATISFACTION: A COMPARISON OF LETTER CARRIERS AND AUTOMATED LETTER-SORTERS IN THE POST OFFICE

by

T. G. TRYTTEN

©

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF ARTS

DEPARTMENT OF SOCIOLOGY

EDMONTON, ALBERTA
FALL, 1985

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR T. G. TRYTTEN

TITLE OF THESIS THE IMPACT OF TASK CHARACTERISTICS ON JOB SATISFACTION: A COMPARISON OF LETTER CARRIERS AND AUTOMATED LETTER-SORTERS IN THE POST OFFICE

DEGREE FOR WHICH THESIS WAS PRESENTED MASTER OF ARTS

YEAR THIS DEGREE GRANTED FALL, 1985

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(SIGNED) Trytten T.

PERMANENT ADDRESS:

32 Beauvista Drive
Sherwood Park, Alta
T8A 3M5

DATED July 31 1985

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE IMPACT OF TASK CHARACTERISTICS ON JOB SATISFACTION: A COMPARISON OF LETTER CARRIERS AND AUTOMATED LETTER-SORTERS IN THE POST OFFICE submitted by T. G. TRYTTEN in partial fulfilment of the requirements for the degree of MASTER OF ARTS.

....

Supervisor

....

....

Date. July 26 1985 ....

ABSTRACT

The area of job satisfaction has received a great deal of attention in the past sixty years in sociological literature. Even with all the work which has been completed in the area there is still debate over the definition, measurement, causes and conequences of job satisfaction. With the issue of quality of working life becoming more prominent in today's workplace, it is timely to review past research and investigate the relationship between specific aspects of the job and job satisfaction.

This thesis explores the relationship between personal characteristics, task characteristics and job satisfaction by contrasting two groups of Postal workers. One group, the automated letter-sorters, work in a highly routinized factory-like environment, while the other group's members function relatively autonomously. These two groups can be seen as polar opposites on a continuum of work routinization.

The data were collected through a survey of all 1,529 Edmonton area postal workers. In total 926 completed questionnaries were returned and analyzed. The two groups differed significantly in terms of their personal characteristics, work histories and task characteristics.

After documenting these differences between the two groups three separate regression equations were undertaken. The first equation found that work group and four task characteristics accounted for 50.08 percent of the variance

in job satisfaction, with the amount of variety/challenge accounting for the largest share of the variance. Other regression equations were undertaken to examine the two work groups separately. The results of these regression equations indicated that for routinized workers, months on shift, overtime hours per week, variety/challenge, supervision and autonomy, explained about 68.37 percent of the variance in job satisfaction. A third regression found that 45.56 percent of the variance in non-routinized workers' level of job satisfaction could be accounted for by, variety/challenge, supervision pay and co-workers.

These finding suggest that there are significant differences between two group's, both employed in the same organization, in terms of their levels of job satisfaction due in part to specific characteristics of the work performed. This research indicates that task characteristics should be considered an important element in determining job satisfaction. There also appears to be a strong relationship between the level of routinization and job satisfaction.

ACKNOWLEDGEMENTS

I would like to thank the members of my thesis committee - Drs. G.S. Lowe, G. Gartrell and R. Hining - for their many helpful comments and patient advice. I would also like thank Dr. Lowe and Dr. Northcott for providing the chance to participate in a large scale research project; the experience was invaluable. In addition, they provided access to the Edmonton Post Office Study data, which made this thesis possible. Finally, I would like to thank my wife, Pat, for her assistance and unfailing personal support.

Table of Contents

Chapter Page

I. INTRODUCTION 1

A. Chapter Outline 6

II. A REVIEW OF RELEVANT LITERATURE 8

A. Job Satisfaction 9

B. Control and Task Characteristics 19

C. Summary 26

III. DATA AND METHODS 28

A. Work Structure of the Edmonton Post Office 33

B. Operational Definition Of Variables 38

C. Personal Characteristics of Respondents 44

D. Past and Present Work Experience 47

E. Summary 52

IV. TASK CHARACTERISTICS AND JOB SATISFACTION 54

A. Task Characteristics 58

B. Job Satisfaction 68

C. Job Satisfaction and Task Characteristics 84

D. Job Satisfaction and Task Characteristics by Group 91

Coders 92

Letter Carriers 96

Intergroup Comparison 98

E. Summary 100

V. CONCLUSION 102

A. Personal Characteristics and Job Satisfaction 104

B. Task Chararacteristics and Job Satisfaction ..106

C. Intergroup Differences 111

D. Suggestions For Further Research 114

VI. BIBLIOGRAPHY 119

VII. APPENDIX 1. COVER LETTERS 128

A. Introductory Letter Sent By Letter Carriers Union of Canada 128

B. Introductory Letter Sent By Canadian Union Of Postal Workers 129

C. Introductory Letter From Research Team 130

D. Letter Attached to Questionnaire From Research Team 131

E. First Follow-Up Letter From Research Team 132

F. Second Follow-Up Letter From Research Team ...133

G. Final Follow-Up Letter From Research Team 134

H. Attached Post Card 135

VIII. APPENDIX 2. MEANS AND ZERO-ORDER CORRELATIONS ...136

IX. APPENDIX 3. QUESTIONNAIRE CODEBOOK 139

List of Tables

Table Page

1 Factor Analysis of Job Characteristics 39

2 Characteristics of Respondents 45

3 Respondents' Work Experience 48

4 Summary Scores of Task Characteristics 60

5 Job Satisfaction Scores 73

6 Postal Workers and E.A.S. Respondents' Job Satisfaction Scores 76

7 Correlation Matrix of Job Satisfaction Measures and Work Group With The Global Satisfaction Item 81

8 Regression of All Job Satisfaction Measures and Work Group on the Global Satisfaction Item 83

9 Regression of Work Group, Personal Characteristics and Task Characteristics on The Global Satisfaction Item 87

10 Regression of Personal Characteristics, Work Experience and Task Characteristics On The Global Satisfaction Item By Work Group 93

I. INTRODUCTION

Probably no single topic in industrial sociology has received as much attention in the last sixty years as has job satisfaction. Even with all of the studies which have been completed over that time, there is still disagreement over the definition, measurement, causes and the consequences of job satisfaction. Concurrently, labour process research, which has developed a prominent place in the sociology of work since the publication of Braverman's book Labour and Monopoly Capital in 1974, has focused considerable attention on the issue of control over the labour process. Labour process theorists are not only concerned with the issue of control over the labour process but also with the overall quality of the individual's work experience. This thesis will address these issues by investigating the relationship between job satisfaction, measures of employees' overall work experience and task characteristics. In doing so, we will be investigating the issue of control over the labour process as raised by writers in the neo-marxist labour process tradition.

The need for this type of interpretive approach has become more timely in the light of the work of Braverman (1974), Nightingale (1982), Rinehart (1978) and Blauner (1970) who suggest that there is a continual drive within twentieth century capitalism towards what Braverman called the "routinization of work". This view was echoed by M. J. Smith (1981:16) when he stated that "breaking work down into simple units (which has been the main outcome of the routinization of work) to reduce memory work and increase the pace of processing, produces a loss of skill and has brought about low-satisfaction jobs ... and poor worker health" (also see Caplan et. al.; 1975, Margolis et. al., 1974; Smith et. al., 1981). If, in fact, jobs are becoming more routinized, which is a more general empirical question itself, then the effect that this process and type of work arrangement is having on those who are preforming the work needs to be closely investigated.

In the light of these concerns, the purpose of this thesis is to explore the relationship between personal characteristics, task characteristics and job satisfaction. The central research question guiding this study is whether the degree of task routinization will influence the satisfaction people derive from their job. To explore this we will look at the relative impact of personal and task characteristics on job satisfaction between two groups of blue collar workers who are polar opposites in terms of routinization. The second issue of interest concerns the specific determinants of job satisfaction for two groups of workers. This will enable us to empirically identify the specific characteristics of routinized work in terms of work tasks. This thesis will therefore augment our understanding of the relationship between job satisfaction and task characteristics by defining the specific determinants of job satisfaction. On a practical level, this work will aid workers, managers and unions in their efforts to improve the quality of working life.

One of the most useful ways to investigate the relationship between job satisfaction and task characteristics is by comparing two groups within a single organization who are performing widely divergent tasks. Details on the two groups we will examine are provided in the next chapter. However, for now it is important to point out that the first group, the Letter Carriers, have relatively autonomous jobs while the second group, the Coders, is comprised of highly routinized, machine-paced workers. By chosing these two groups we are able to maximize their task characteristics differences to allow us to study the specific characteristics of the work which influence job satisfaction. Generally, factors such as the amount of decision-making power, closeness of supervision and the amount of social interaction with co-workers, have all been linked with the reported level of job satisfaction, as well as being representative of the level of work routinization in a job. It is possible that these factors influence distinct blue collar work groups differently. Through the examination of these variables, among others, it may be possible to gain a better understanding of the complex interrelationship between job satisfaction and perceived work characteristics.

Two major types of explanations for any differences between group's levels of job satisfaction can be found in the literature. The first is that the one group may have different personal characteristics such as their age, sex, marital status, number of children, education, family income and non-work social support. This explanation seems to be inadequate in that it does not allow for the assocation of job satisfaction with characteristics of the work being performed (Kalleberg, 1977:124; cf. Vroom 1964).

The second traditional explanation "views variation in job satisfaction characteristics solely as a function of differences in the nature of jobs people perform" (Kalleberg, 1977:124). A major problem with this type of explanation is that it does not allow for individual differences in the amount of satisfaction people take in same job. If this reasoning were correct then it can be assumed that all workers in a particular job would be equally satisfied. In addition, Goldthorpe (1968) argues that to understand a worker's level of job satisfaction, a researcher must also understand the "meanings that individuals impute to their work" (Kalleberg 1977:124). Given the weaknesses of these two approaches and in light of Goldthorpe's critique, we must try and consider how intrinsic and extrinsic job characteristics influence satisfaction.

This thesis will use self-reported measures of job characteristics and job satisfaction since objective measures were not taken during the survey, which is consistent with much of the previous research. Furthermore, it is the workers' perceptions of their job situation which is of concern to this study because the same objectively measured conditions can have different effects on different workers depending on their self-perceptions and individual frame of reference. It is the individualized worker's responses to the job's characteristics that is the major concern of this study. Later, we will argue that self-reported measures should accurately reflect the way workers perceive their job conditions and job satisfaction.

Our working hypothesis is that the more routinized the tasks workers perform, the lower their level of job statisfaction. One explanation is that the Letter Carriers, the least routinized workers, will be different from the Coders in their basic demographic characteristics. Therefore we will control for demographic characteristics to see if this explains any differences in the scores on the job satisfaction scale. Older workers may be more satisfied with their jobs, or they may have selected themselves into jobs they feel more comfortable with. Married workers may be more satisfied with their jobs because they have greater economic pressures, which force them to adapt to the job, than single workers.

The second explanation is that the job characteristics affect the job satisfaction scores for all workers. To test this idea, we will examine the amount of the variance in job satisfaction which can be accounted for by characteristics of the work. This will indicate if task characteristics determine job satisfaction and if so, which specific task characteristics have the strongest effects.

Finally, this study will determine if, for the two groups, different task characteristics may be influencing each work group's level of job satisfaction. This requires us to document differences in the job satisfaction scores while using job characteristics in a regression equation and controlling for the person's occupational group, either Letter Carrier or Coder. This will help determine if there are differences in the task characteristics scores of the groups in relation to their job satisfaction levels. The Coders, as the most routinized workers, may be less satisfied with their jobs than the Letter Carriers.

A. Chapter Outline

In order to gain an understanding of the complex interactions among task characteristics and job satisfaction occurring within the workplace, it is necessary to examine some theoretical and empirical research which has been conducted by previous investigators. To this end, Chapter Two will tie together some of the strands of other research to determine points of convergence and disagreement regarding the effects of various personal and task characteristics on job satisfaction.

The third chapter will describe the data and methods used in the Post Office study. This study provides an excellent opportunity to contrast two separate groups, who work within the Post Office, but vary dramatically in the types of task they perform. It is this variance which will be critical in this study since it provides an opportunity to clearly delineate which known task characteristics are related to job satisfaction.

The fourth chapter will describe the results of our analysis of the differences between the two groups, Coders and Letter Carriers, regarding their level of job satisfaction. This chapter will document any differences between the two groups and provide a series of regression equations to determine the extent to which key personal and task characteristic variables influence job satisfaction. The second objective of this chapter is to separately determine which task characteristics influence the routinized and the non-routinized group's level of job satisfaction.

The final chapter will summarize the results of this study and suggest some possible directions for future research. We will attempt to determine the type of task characteristics which will influence workers' levels of satisfaction in an effort to provide more information on this relationship. Once this relationship has been mapped out, it can be used to alter the workplace to maximize workers' level of job satisfaction.

II. A REVIEW OF RELEVANT LITERATURE

Questions such as what is job satisfaction, how can we improve it and what are its determinants are all being asked by managers, unions and public policy-makers alike in a effort to better the quality of working life of the average worker, as well as to enhance productivity. In an effort to contribute to this discussion, it is necessary to look at two separate aspects of job satisfaction. First, what is job satisfaction, since if it cannot be objectively defined then it cannot measure or altered. Secondly, what is the relationship between the specific characteristics of the work performed and job satisfaction. If managers and unions, through the collective bargaining process, wish to improve the satisfaction level of employees, they must be at least reasonably confident of the work characteristics which are linked to either increased or decreased job satisfaction.

This chapter will define what is meant by job satisfaction and will review previous research which has shed some light on job satisfaction and its relationship to task characteristics. In addition, given our interest in routinization and the links between routinized task characteristics and job satisfaction, we will also examine the element which is central of routinization, namely control. There appears to be a relationship between job satisfaction and the concept of control, and more specifically the level of routinization, since there is evidence to suggest that those workers who do not control the work process are less satisfied than more autonomous workers. What we are attempting to do, then, is to provide an operationalization of control and determine what there is in a job which contributes or detracts from this.

A. Job Satisfaction

Before we proceed further, it is necessary to clearly define job satisfaction. Job satisfaction has been defined as the "pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's work values" (Locke, 1976:1300, cf. Kalleberg, 1977:127). Most definitions of job satisfaction contain two elements, first a subjective evaluation of the working conditions and secondly, how well the job meets the worker's perceived needs. The perceived level of satisfaction is actually a balance between the workers needs and the rewards obtained from performing the job (Kalleberg, 1977:126). The worker's level of satisfaction is the result of the perceived conditions of the job which are interpreted by the worker's frame of reference. The level of satisfaction is dependent upon a series of conditions which may change over a relatively short period of time since the workplace and the individual are dynamic, rather than static entities. In summary, job satisfaction can be considered a transient, subjective state, rather than an static, objective condition. The worker can accurately describe his satisfaction level at one point in time in comparison to other times and different jobs.

The next question is how to effectively measure job satisfaction. One of the most commonly used methods of measuring job satisfaction has been to ask a general type of question (Burstein et. al., 1975; Quinn and Staines, 1979). Information on general, or global, job satisfaction can be gathered by asking questions such as "in general how satisfied are you with your job?". This approach assumes that questionnaires can measure, with varying degrees of accuracy, the level of satisfaction relative to other workers. This does not argue, however, that the global measure of job satisfaction is unidimensional in cause, rather that this measure provides a picture of the employee's general level of satisfaction. Therefore although the work satisfaction level is a single concept, it is a composite of numerous causes including a worker's perceptions of the task design, social support from co-workers, task variety, autonomy and intensity of work. In other words, even though job satisfaction is a complex subjective state, workers can make general statements regarding levels of satisfaction because he/she has either consciously or unconsciously evaluated the job in terms of his/her own frame of reference. This approach has been used by researchers such as Gruenberg (1980), Lemkau and Pottick (1984) Jurik and Halemba (1984) in an effort to measure the global level of work satisfaction.

The major problem with the single subjective measure approach is that there may be a discrepancy between what a worker indicates are his/her attitudes and the actual behaviour on the job, as measured by more specific job satisfaction questions. The 1975 Canadian Work Values Study found that 89 percent of all workers surveyed reported that they were at least somewhat satisfied with their job (Burstein et. al., 1975:28). When the same people were asked if they would chose the same type of work again, a more specific attitudinal measure, only 50 percent replied that they would take the same type of work again while 31 percent reported that they would definitely take some other type of job. When asked whether or not they would recommend the job to a good friend, 59 percent said that they would but 41 percent replied that they would have have doubts or would not recommend it (Burstein et. al., 1975:29).

Clearly the global job satisfaction measure elicits a positive response while other measures, such as "Would you take the same type of work again?", may indicate a less positive appraisal of the work. It has been suggested that the global type of question is generally answered positively because a negative responds would threaten the worker's self-esteem (Burstein et. al., 1975:28) and his/her rationale for staying in a position which makes him/her unhappy. A strong normative element exists which directs the worker towards admitting job satisfaction rather than job dissatisfaction. A second explanation could be that better jobs may not be preceived as being available therefore the more positive responses to the global satisfaction question are "pragmatic judgements of one's position expressed vis-a-vis the narrow range of available jobs" (Rinehart, 1978:7).

More specific global questions which measure behaviour, such as "Would you take the same type of would again", are framed in what would be possible if **all** constraints were removed and the individual was totally free to chose another job. As a result, the more specific questions are answered less positively since they reference the worker's perceptions of not only their job satisfaction but also the worker's view of how well their job compares to other jobs.

Another problem with using a global measure is that since job satisfaction is relative to the individual's reference group and to his/her own expectation, two workers may evaluate the same job very differently. This lack of control over the background and reference group of the subjects is a problem which can be partially controlled in this study since the two groups under investigation can be held constant in terms of age, sex and education, all variables found to be related to satisfaction.

In summary then, the global type of job satisfaction measure has strengths and weaknesses but the question, "In general how satisfied are you with your job", has been found by researchers such as Quinn and Staines (1979:204-232) and Petty (1984), to produce a wide degree of variance between groups, especially if the two groups were very different in their characteristics. This study is directed towards determining overall satisfaction and which aspects of the job influence that overall level of satisfaction. We therefore need an general measure of job satisfation rather than a measure which may be specific to one type of work or set of tasks. As a result, the global measure of job satisfaction will be used as the dependent variable in this study.

As a starting point, we will now turn to the traditional correlates of job satisfaction--age, sex and education--which have been found to be related to job satisfaction by other researchers. Among these personal characteristics, age has been the most widely researched. Younger workers generally report less satisfaction than their older counterparts. Burstein et. al. (1975:43) suggested that age was the strongest demographic predictor of job satisfaction. Three explanations have been offered for this finding, first that younger workers have different values and aspirations which are not being met by the job. (Krahn, 1983:230; cf. Wright and Hamilton, 1978). Second, older workers may demand less from their jobs and as a result are more easily satisfied (Wright and Hamilton, 1978). This lowering of expectations results from a resignation of the worker to the conditions of the job. Finally, the older workers may have moved into better jobs because of their greater seniority within an organization

(Rinehart, 1978:8). Although no one explanation has been satisfactorily proven, there is agreement that age is correlated to job satisfaction.

The 1973 Work Values Survey found that in general men and women were about equally satisfied with their jobs (Burstein et. al., 1975:55-56). A further analysis uncovered that females were more satisfied with their supervisors and less satisfied with their benefits and promotion opportunities (Burstein et al., 1975:57). Northcott and Lowe (1984) also found that there were significant differences between male and female workers' job satisfaction. An initial explanation is that women may bring lower expectations to the job and therefore are more easily satisfied then men (Murray and Atkinson, 1981:50). This explanation was disputed by Miller (1980) who found some gender differences but concluded that "job conditions are more strongly related to job satisfaction than are the social characteristics of the workers or the predispositions they bring to the job" (Miller 1980:361). These findings suggest that gender may be an important variable in relation to job satisfaction. An important caveat to in studying the relationship between age, sex and job satisfaction is that these variables have been found to have small effects only in large samples. Therefore we do not expect that they will have an major effects in this sample but these demographic variables do provide an initial starting point for the analysis.

The most straight-forward link between education and job satisfaction suggests that the larger an individual's investment in education, the more they expect their job to be rewarding and satisfying. As a result, the same job which may be satisfying to a less educated person, may be very dissatisfying to a more educated individual (Zeitz, 1983:1091). This relationship was suggested by Blauner who argued that education created within an individual higher order needs (1964:29). Reseachers such as Glenn and Weaver (1982) have tried to support this hypothesis but, as yet, the results are still ambiguous.

Individual work experience, in addition to personal characteristics, may be correlated with the level of job satisfaction. Factors such as seniority, whether the worker is employed full or part-time, shift and amount of overtime, all intuitively seem to be related to the individual's level of job satisfaction. We might expect that workers who have been with the organization a long time, a measure of seniority, would have a higher level of job satisfaction than newcomers. This may be due to the fact that there is an adaption process where the worker's goals and aspirations are adjusted to reflect the available job rewards. Or there may be a selection process operating, where only workers satisfied with the job stay there for long periods of time. This must be viewed cautiously as the question of time on the job can become a tautological explanation of job satisfaction. If a worker is satisfied, they will stay with a job. A worker who has stayed on the job for an extended period of time is satisfied. To avoid this tautology, being employed for a longer period of time at one job should not be considered a direct measure of job satisfaction.

Past researchers have collected information on seniority but have rarely examined its relationship to job satisfaction. Caplan et. al. inquired about the length of service in a job but used these data only to provide a measure of the amount of knowledge an individual had developed regarding how to perform the job (Caplan et. al., 1980:31). They did not attempt to correlate job dissatisfaction and stress with length of time on the job. Similarly, Quinn and Staines (1979) asked their sample "how many years altogether have you worked for your present employer" but they did not attempt to find any relationship between job satisfaction and this question (Quinn and Staines, 1979:313). Nightingale, in his questionnaire, asked not only "how many years have you been working in this organization" but also "how many years have you been working in your present position" (Nightingale, 1982:Appendix III, page 11). From these studies, it becomes clear that although seniority data, as measured by length of time either in the organization or in a position, is regularly collected by social researchers, it is rarely used as either a control or explanitory variable in regards to job satisfaction. This is criticism of past studies since, as was mentioned earlier, intuitively, length of time on the job, like age, may be related to job satisfaction. In fact, in some studies age may have been used as a poor proxy for length of time on the job since olders workers are generally assumed to have been working for an organization longer. Given these concerns, we will examine age and length of time on the job as separate variables, which may be related to job satisfaction.

A second work factor which may be related to job satisfaction is the question of the effects of shift work. The issue of shifts, and their affect on work performance and attitudes, has received considerable attention in the literature (Finn, 1981; Nilsson, 1978; Tilley et. al., 1982). Research indicates that shift work can be inherently stressful, especially rotating and night shift because of the less fixed work schedule. This can result in a disruption of sleep patterns, family relations due to the changing hours, and a general loss of outside social contact, all factors which have been linked to an increased stress level and a resulting decrease in the level of job satisfaction. Tilley et. al. (1982) suggested that shift work can reduce the speed at which tasks are performed. This has serious ramifications for the Coders since they are performing routinized task which require manual dexterity and concentration. Keeping these findings in mind, it becomes clear that job satisfaction may be related to shift work and that we must consider shift work as a variable in further analysis.

Finally, the amount of overtime an individual may have to work might be related to job satisfaction. If a worker was required to work extra overtime and did not wish to do so, we can might expect that their level of job satisfaction might decline. Correspondingly, if the worker wanted overtime, due to its link to an increased financial reward, and was denied the overtime, then they might also express a decrease in job satisfaction. Overtime work therefore may be a proxy for intrinsic versus extrinsic work values (Kalleberg, 1977). Conversely, overtime work may be a measure of organizational pressure and work intensity.

In summary, global and facet specific questions have been used to measure job satisfaction. The facet-free measures have the advantage of tapping the worker's larger frame of reference. On the other hand, the facet-specific questions are linked to whether or not the individual is satisfied with particular aspects of the job, such as wages, co-workers or supervision. Personal characteristics such as age, sex and education have also been found to be related to job satisfaction. These effects have been found to be rather small by other researcher so we do not expect that personal characteristics will have a major relationship on satisfaction. Personal characteristics do however provide a useful starting point for the analysis. Although rarely discussed in light of their effect on job satisfaction, work experiences such as seniority, shifts and overtime, may be related to workers' level of job satisfaction. We will therefore examine personal characteristics and work experiences to determine if these variables are in fact related to job satisfaction. We now will investigate several key studies of job satisfaction to determine what they found regarding the relationship between working conditions, task characteristics and job satisfaction.

B. Control and Task Characteristics

During the 20th century, job satisfaction has been approached from many different prespectives in an effort to clarify the issue and improve job satisfaction. The Hawthorne study, perhaps the earliest study of motivation and the subjective experience of work, found that worker attitudes influenced their productivity and work organization (Rothelisberger and Dickson, 1939). This is an important point, indicating that these studies and much of the work to follow was aimed at, not necessarily the altruistic goal of creating a satisfied work force, but at creating a more productive work force. The Hawthorne research also provides the first tenative connection between job satisfaction and the content of the work itself. The desire to increase productivity continues to be one of the major motivating factors in studying job satisfaction. However, with the growth of the Quality of Working Life movement around the world and especially in Sweden (Goranzon, 1982), satisfaction is beginning to be studied in an effort to assist the worker in leading a more satisfying life.

One branch of the Human Relations school, prominent until the 1960's (Locke, 1976), stressed the importance of the leadership style in effecting productivity and job satisfaction. This approach suggested a more democratic management style as opposed to the more traditional authoritarian style. The major drawback was that managers saw this as a reduction in their perogative to manage and resisted the proposed changes. In the late 1960's, inconsistent research findings led to the modification of the Human Relations school into the Human Resource approach, which held that the productive worker was satisfied (Petty et. al., 1984:712) As late as 1984, there is evidence to suggest that although the research on the linkage between job satisfaction and task characteristics has been underway since the 1920's, researchers are still unclear as to the exact relationship between job satisfaction and task characteristics (Petty et. al., 1984:712).

Central to both of these approaches is the broad question of who controls the production process. Since the publication of Braverman's book in 1974, there has been a great number of studies focusing on control of the labour process. This research assumes that control implies a hierarchy of responsibilities and duties (Thompson, 1983:150), with those at the top directing subordinates towards a desired end. Central to recent labour process theories and to the routinization of work is the idea of the systematic deskilling of work (Braveman, 1974). In short, as jobs become more routinized, they become more fragmented resulting in a loss of worker's control over the work process (Thompson, 1983:91).

Two major problems with this type of research have been identified. First, it is still unclear how uniformily changes introduced by management into the labour process, such as automation and the reorganization and rationalization of production, impact on workers. A change in the production process results in a reduction of the differences among workers so that skill levels and rewards become more similar. Braverman argued that "the giant mass of workers .... are relatively homogeneous as to (the) lack of developed skills, low pay, and interchangeability of person and function" (Braverman, 1974:359).

Secondly, "systematic definitions of skills are suprisingly hard to come by in the literature on deskilling" (Thompson, 1983:92). Even given these concerns, the whole direction of the sociology of work research has been reoriented through these labour process studies. Therefore we are addressing both a traditional concern in the literature and key issues in the new research on the labour process. Specifically we address some of the concerns of the new labour process literature by trying to empiricially define the task components of routinized work.

The issue of control over the production process is central to the investigation of job satisfaction in that control which has shifted away from the worker has been viewed as resulting in "vast discontent, dissatisfaction, resentment, frustration and boredom" with work (Edwards, 1979:154). Kohn's research (1976) suggests that 'self-directed work'--which involves inititiative, thought and independent judgement--increases worker satisfaction and reduces alienation. Self-directed work can be considered the antithesis of assembly line work, where the 'workers' activities are machine paced, closely supervised and highly fragmented so that the worker is allowed no sense of control over the production process.

It is believed that routinized tasks are characterized by a lack of autonomy, decision-making, responsibility and challenge because the automated equipment and the production methods removes the ability to make significant decisions regarding the production process. The result is that the workers are able to derive little satisfaction from their work. Routinization is defined as a work design which allows the worker little control over the work process. The routinized job is characterized by the fact that the same actions are continually repeated within a short period of time (Kohn, 1976:119). The fragmentation of work has increased productivity within the workplace but has also had physical and mental consequences for the worker involved with the process. As Gardell noted "mechanization which did away with a considerable amount of physical toil, also entailed increased noise, monotonous work situations, stress, lack of freedom and social isolation" (Gardell, 1980a:3).

Past research has examined these aspects of routinized work by studying a homogenous group of workers. Rather than looking at a single, uniform group, we will compare two groups which represent both ends of the continuum in terms of their level of task routinization. Possibly, changes in blue collar work are not, as suggested by labour process theorist, uniform across all workers. There may be different effects for groups which differ in their task characteristics.

Several recent Canadian studies have investigated the relationship between job demands and satisfaction. The Work Values Study (1975) identified that having an interesting job was what mattered most to workers (Burstein et. al., 1975:29) and that control and creativity are key elements of interesting work. Coburn (1981) suggested that work alienation, a concept which overlaps with job satisfaction and was defined as low autonomy, decreased levels of task variety and low challenge within a job, was associated with low job satisfaction. These studies found that the design of the workplace had a direct impact on both the employee's physical and mental health, such as a increase in the employee's stress level. Taken with the results of Caplan et. al. (1980), this suggests that a worker's health and overall level of satisfaction may be negatively affected by highly routinized work, ie. work which offers little opportunity for control over the work process.

Exactly what specific job characteristics contribute to either satisfaction or dissatisfaction is still contentious. This is a central issue since we hope to empirically establish which task characteristics are important in contributing to job satisfaction.

The second major issue is precisely which task characteristics contribute to variations in satisfaction for different groups of workers. Previous contributions to this debate can be placed into two broad categories, regarding the relative importance of the intrinsic factors versus the extrinsic factors contained within the work situation. On one hand, Baron and Biebly (1982) argue that aspects such as skill requirements, variety, physical mobility and control affect satisfaction. Locke (1976:1323-1324), on the other hand, notes that more objective factors such as pay, promotional opportunities, and working conditions effect the level of satisfaction. Bertill Gardell and others (Gardell, 1980b:7; Caplan et. al., 1975) suggest that quantitative overload, qualitative underload, lack of control and lack of social support are the important aspects in a person's perception of the job situation. Although various researchers may differ on the factors they believe influence satisfaction, it seems clear that highly routinized work is related to job dissatisfaction (Caplan et. al., 1980; Gardell, 1980a; Kornhauser, 1965) and other related outcomes, such as poor mental and physical health (House, et. al., 1979).

A major critique of Kalleberg's influential research is that he did not control for the type of work which the individual was involved in (Kalleberg, 1977). He assumed that all blue collar work had the same effect on job satisfaction for all workers, irregardless of the production process the individual was involved with. This study will differentiate between two blue collar work groups to determine if the characteristics of the type of work performed are related to job satisfaction.

Part of the purpose of this study therefore is to determine what specific job characteristics are linked with job satisfaction while examining two separate groups in order to fill this gap in the literature. We thus go beyond existing research to empirically determine the task characteristics which are related to job satisfaction for two separate groups, who work within the same organization but perform very different types of work. This will help establish an empiricially based definition of routinized work as well as identifying which task characteristics need to be changed to improve workers' quality of working life. These characteristics, and their relationship to job satisfaction, may vary between blue collar groups.

C. Summary

This review of the literature has shown that job satisfaction is a unitary concept with multi-faceted causes (Kalleberg, 1977:126), which can be measured two separate ways. Both the facet specific and the global measures have advantages and disadvantages which need to be considered when interpreting the resulting data.

Now, from the literature review, we have identified two issues which are essential in clarifying our understanding the sources of variation in job satisfaction. The issues include:

1. **Which specific task characteristics influence the worker's level of job satisfaction?**
2. **Are the task characteristics related to job satisfaction consistent for all blue collar workers? Is the work's level of routinization a major factor in determining job satisfaction?**

This study will clarify these issues by examining the Coders, who perform routinized tasks and comparing their job satisfaction and task characteristics to a group which performs non-routinized work--the Letter Carriers. On a practical level this thesis will assist anyone interested in improving quality of working life by identifying specific task characteristics which are linked to job satisfaction/dissatisfaction. The next chapter will outline the methodology used to obtain the data and will describe the personal and task characteristics of the Coders and the

Letter Carriers.

III. DATA AND METHODS

A review of the relevant literature revealed that little Canadian work had been done in the area of job satisfaction and job characteristics. In an effort to increase the body of knowledge available to researchers concerning Canadian workers, a study was funded by Labour Canada, the University of Alberta's Central Research Fund and the Alberta Government's Summer Temporary Employment Program to investigate working conditions and job stress among Edmonton Post Office Workers, directed by Drs. Lowe and Northcott. In order to initiate occupational health programs designed to increase job satisfaction, more needs to be known regarding the task characteristics which contribute to job satisfaction/dissatisfaction.

The data for this research were provided by a survey of the members of the Canadian Union of Postal Workers (Edmonton Local) (CUPW) and Local 15 of the Letter Carriers Union of Canada (LCUC). The available literature was surveyed and in consultation with the two unions, an instrument consisting of eighty-two questions was developed and mailed to 753 CUPW and 776 LCUC members during March of 1983 (Lowe et. al., 1983). The questionnaire included fifteen sections asking about a variety of different topics including: basic demographic data, job satisfaction, work experience, work schedule, working conditions, job characteristics, discrimination and sexual harassment, child care methods, perceptions regarding the representing union, social relationships, financial status, physical health, both prescription and non-prescription drug use, work pressure, and lifestyle.

Key measures, such as those dealing with the task characteristics and job satisfaction were drawn out of previous studies, and have good reliability and validity.[1] Once an initial draft of the questionnaire was developed, it was circulated to both unions' executive for comments. Their respective comments were taken into consideration and the questionnaire was revised again. Their comments, at the pretest stage, and identification of what they felt were the key issues facing postal workers were invaluable in the final preparation of the instrument. As well, their comments confirmed the face validity of the instrument used in the study.

During the discussions with the CUPW executive it became clear that the union felt a more complete understanding of the special problems facing the inside workers, who work inside a large factory-like complex, could only be gained by comparing them with other workers, especially the Letter Carriers, members of LCUC, who had a good deal of automony over their individual daily work routines. They also suggested that the Coders, a small group of inside workers, would likely be of great interest given the repetitive type of work they performed. It was from these meetings and our tours of the main postal plant that the comparative strategy, which is used throughout this research, was developed.

---

[1] See Appendix 3 for a copy of the final codebook which contains the complete questionnaire.

The questionnaire was pretested on a group of thirty CUPW members and thirty LCUC members, who were mostly union stewards. Union stewards were chosen as the pretest respondents to assure a high pretest response rate and because of their general knowledge of the working conditions within the Post Office. The results were then briefly analysed and the questionnaire was revised. The data were included in the final results of the survey since the questionnaire underwent only minor revisions after the pretest.

In order to solicit the highest possible response rate, a five stage mail out procedure was used (Herberlein and Baumgartner, 1978). Initially each union's executive mailed a letter to all members advising them of the survey and requesting the individual's cooperation.[2] About one week later, the research team mailed out a package containing a letter, a questionnaire, a postage-paid business reply envelope and a postage-paid post card. The package was mailed to each union member's home address. The list of employees was taken from both unions' membership list and included all those people working in Edmonton, Sherwood Park, Spruce Grove, St. Albert, Fort Saskatchewan and Leduc, in total 1,529 employees. This was therefore a survey of the total population rather than a sample of Edmonton postal workers.

---

[2] A copy of this and subsequent letters are included in Appendix 1.

The survey package contained an introductory letter from the research team on University of Alberta letter-head, and briefly descibed the survey while requesting the individual's cooperation. The letter also included a telephone number so that respondents could ask the survey team any questions regarding the questionnaire. The use of an introductory letter has been shown to increase the response rate of mailout survey participants (Heberlein and Baumgartner, 1978).

The questionnaire itself was in the form of a booklet, approximately five by seven inches in size with a brown cover and the University of Alberta logo embossed on the front cover. The return envelope was a self-addressed, postage stamped brown mailing envelope and was addressed to Dr. G. Lowe and Dr. H. Northcott, the principal investigators, Department of Sociology, University of Alberta.

The post cards requested the employee to print his/her name and return the post card separately from the questionnaire.[3] This allowed the research team to eliminate those who had responded to the questionnaire from the mailing list without violating confidentiality. The maintenance of confidentiality was a major concern given the the union executives' description of the then current atmosphere within the Post Office. The post cards were green or blue in colour to enable the research staff to quickly find the respondent's name on either the LCUC or CUPW mailing list.

---

[3] A copy of this post card is included in Appendix 1.

Approximately one week later, a third mailing which consisted of a follow-up letter, was mailed to all questionnaire recipients. Approximately two weeks later a second questionnaire was mailed to all non-responding union members. Finally, a follow-up letter was mailed one week later to all individuals who had not yet returned a questionnaire.

This procedure resulted in the return of 992 completed and usable questionnaires, 514 from CUPW and 478 from LCUC. This produced an overall response rate of 65 percent, with CUPW's rate being 68 percent, about 6 percent higher than the response rate for LCUC. It is believed that the higher response rate from CUPW members reflected their greater concern with issues addressed within the survey.

Two large caveats must be made at this point regarding the interpretation of the resulting data. The first is that there is no means of testing whether or not the 65 percent who returned the questionnaires are in any way different in terms of personal characteristics from those union members who did not return the questionnaires. It is possible that there is some bias introduced into the results because those people who did not respond may have been different from those who did respond. Consultations with both union's executive, after the survey was completed, indicated that they felt that the survey results, especially in terms of the age and sex distribution of members, accurately reflected the known unions' composition. This is highly speculative though since neither union maintained any demographic information on its members.

Second, Edmonton Postal workers may not be representative of all Canadian postal workers, nor Edmonton or Canadian blue-collar workers in general. Therefore generalizations to a broader population can only be made with caution. The findings do possibly suggest general trends within the Post Office though, given the fact that the structuring of work and management practices in Post Offices across Canada are very similar.

A. Work Structure of the Edmonton Post Office

A study of Canada Post is useful because of the very clear contrast between the work groups, based on the type of work that each group performs. This provides a clear contrast between the work groups in terms of their level of task routinization. In this way the Post Office provides a continuum of routinization from the relatively automonous Letter Carriers, at one end of the scale, to the automated inside workers, at the other end on a scale of job routinization. Members of the Letter Carriers, especially the Letter Carriers, have very different working conditions from members of the Canadian Union of Postal Workers, the inside workers who sort the mail.

After discussion with the unions, it was decided to concentrate on two specific groups within the Post Office, the Coders and the Letter Carriers, due to the extreme difference in the characteristics of the tasks they preform. This is of interest since both groups work within the same organization. As was stated above, the Coders have very little control, ie. autonomy, over the work process while the Letter Carriers have a great deal of control over their work day. These two groups provided a picture of the extremes in routinization as well, since the Coders perform the same operations throughout the work shift while the Letter Carriers perform a wide range of task, from sorting mail to its hand delivery, within the same shift. As a result of this difference, these two groups were chosen to represent what might be considered polar opposites on measures of routinization, autonomy and task characteristics.

The Letter Carriers use almost no advanced technology, have little direct supervision and function fairly autonomously when they are on their delivery route. The Letter Carriers work an eight hour day divided by a thirty minute lunch hour and two ten minute coffee breaks. The actual hours of work vary depending on the volume of mail and weather conditions, with each Letter Carrier being assigned a route to complete each day. The routes are designed so that those with a smaller volume of mail encompass larger distances while the routes of those with a high volume of mail are smaller in size. Having a large volume of mail on a Letter Carrier's route would mean that the worker might have to spend as much as two and one half hours in the morning and a hour in the afternoon preparing by hand the route's mail for delivery.

The inside workers present a dramatically different picture. They work inside a large factory-like "plant", and are closely supervised both by their direct supervisors and by hidden security personnel. The workers are also monitored electronically or from behind one-way mirrors. Smith et. al. (1981) have shown that close supervision and negative feedback are related to high levels of stress and, indirectly, to a lower level of job satisfaction. One would thus expect that the inside workers would have lower job satisfaction than the Letter Carriers.

The inside workers have little discretionary decision making power with regards to the way they perform their jobs. In fact, the distinction between the inside workers and the Letter Carriers can be seen, in the sociological sense, as the difference in their ability to control the production process. Work within parts of the plant is similar to that of an assembly line as mail is delivered into the building, coded and sorted mechanically, and finally bagged, either to be sent to the Letter Carriers for home or office delivery or shipped to other locations.

Within CUPW there is a small group, called the Coders, who are of special interest because of the characteristics of the job they do, since the task characteristics clearly affect the worker's level of autonomy. The Coders operate the four machines used in automated letter sorting, the Letter Sorting Machine (LSM), the Optical Character Reader (OCR), the Flat Sorting Machine (FSM) and the Group Desk Suite (GDS) (Northcott and Lowe, 1984). Using the LSM and the OCR involves feeding mail into and taking mail out of machines after they have either been sorted automatically or read by the optic code reader and a yellow bar tag applied. The speed at which these machines process mail requires a rapid work pace, with a short task cycle for the operator.

The FSM requires the operators to pick up the larger pieces of mail and type four of a six character postal code upon the item. Working at the GDS, the Coders type a six character postal code on the front of each letter. This bar code is then read by the automated sorting machinery. This operation allows letters to be sorted more rapidly since the process is fully automated. The pace is intensive as letters are dropped in front of the Coders, who are seated at individual desks along a track and they then type in the code. The first letter is removed mechanically and another falls from the track directly above the coder's head. GDS and FSM operators are expected to process 1800 pieces of mail per hour over the course of the eight hours shift. Their output is recorded and posted daily (Northcott and Lowe, 1984) thereby introducing an element of competition among the workers and possibly reducing the level of job satisfaction because of rigidly define performance goals. The shift involves an eight hour day including a thirty minute lunch break and two fifteen minute coffee breaks and a five minute break each hour (Northcott and Lowe, 1984). The workers rotate between equipment weekly, for those on day and evening shift, and monthly for those working the night shift.

In summary, the working conditions of the Coders and the Letter Carriers are strikingly different. The Coders work in a highly routinized, automated environment while the other group works outside, under their own control. The Coders lack of decision making power, the closeness of supervision and the lack of social interaction with other workers may have a negative effect on their job perceptions. The noise level within the plant makes conversation very difficult, reducing the amount and quality of social interactions. Given that the job requires a short work cycle, they should score lower when asked to measure their task variety compared to the Letter Carriers who perform a wide variety of tasks during the work day. Because of these differences, these two groups were chosen to represent the extremes along a routinization continuum. **The central concern of this research arises from the expectation that the different task characteristics of the two groups will result in varying degrees of job satisfaction. The main issue is whether or not the inside workers, specifically the Coders, have a lower reported level of job satisfaction,**

when compared to the Letter Carriers, because of the degree of routinization in their work tasks.

B. Operational Definition Of Variables

Various measures where taken from the survey in an effort to operationally define the concepts of task characteristics and job satisfaction.

Job Characteristics were measured along seven dimensions: Supervision Summary Score, Autonomy Summary Score, Intensity Summary Score, Co-Worker Summary Score, Variety/Challenge Summary Score, Rewards Summary Score and Time Pressure Summary Score. These seven dimensions were developed through a factor analysis of twenty nine job description items, each scored on a 7-point Likert scale and adapted from the U.S. Quality of Employment Survey (Quinn and Staines, 1979) (See Table 1). Only those items with a factor loading of .4 or greater were included. In an order to simplify the twenty nine items into relevant scales, the intercorrelations among the items were factor analyzed using a principal factor procedure within SPSSx. The resulting matrix was produced by a varimax rotation of the intercorrelations (Kalleberg, 1977). This procedure produced six factors which seem to have underlying commonality. To these we added a seventh dimension, a combination of separate questions which appeared to have an underlying commonality.

Table 1
Factor Analysis of Job Characteristics[1]

Scale/Factor	I	II	III	IV	V	VI	Eigen Value	Pct. of Var.
My supervisor is competent in doing his/her job.	.8422							
My supervisor is concerned about the welfare of those under him/her.	.8052							
My supervisor is helpful to me in getting my job done.	.7896							
My supervisor is successful in getting people to work together.	.7892							
My supervisor is friendly.	.7707							
The physical surrounding are pleasant.	.4499							
Discipline is handled fairly.	.6691							
1. Supervisor Summary Factor							7.1396	24.6%
The work is interesting.		.7073						
The job lets me use my skills and abilities.		.7016						
The job I do is meaningful to me.		.6971						
The job requires that I be creative.		.6652						
My job requires that I learn new things.		.4903						
The chances for promotions are good.		.4412						
2. Variety/Challenge Summary Factor							2.6503	9.1%
The job requires that I work very fast.			.7935					
The job requires that I work very hard.			.7949					
The job requires that I do some things over and over.			.5208					
I never seem to have enough time to get everything done on my job.			.4625					
On my job, I can't satisfy everybody at the same time.			.4271					
3. Work Intensity Summary Factor							2.1356	7.4%

Table 1 (Continued)
Factor Analysis of Job Characteristics[1]

Scale/ Factor	I	II	III	IV	V	VI	Eigen Value	Pct. Of Var.
I have the freedom to decide what I do on my job.				.6494				
I determine the speed at which I work.				.6488				
I decide when to take breaks.				.6486				
It is basically my responsibility to decide how my job gets done.				.5682				
4. Autonomy Summary Factor							1.5447	5.3%
The pay is good.					.7204			
The job security is good.					.6909			
The fringe benefits are good.					.5853			
5. Financial Reward Summary Factor							1.3146	4.5%
The people I work with are helpful to me in getting my job done.						.8214		
The people I work with take a personal interest in me.						.7094		
6. Co-Workers Summary Factor							1.2451	4.3%
I am free from conflicting demands that other people make of me								
7. Time Pressure-Role Conflict Summary Factor								
Total Percentage of Variance Explained								55.3%

[1] Factor loading less than .4 are arbritrarily ignored.

Supervision, alpha=.90, consisted of: discipline handled fairly, supervisor gets people to work together, supervisor concerned about employee welfare, supervisor is friendly, supervisor is competent, supervisor is helpful to me, and supervisor treats some employees better than others.

The Autonomy Summary Scale had an alpha of .65, and consisted of: I can decide what I do, decide when to take breaks, determine work speed, decide how job gets done. The Intensity Summary Scale consisted of the statements: work very hard and work very fast, and had an alpha of .72. The Co-Workers Summary scale reported an alpha of .68 and consisted of the questions, co-workers take a personal interest in me and co-workers are helpful. The Variety/Challenge Scale combined the questions: my job lets me use my skills and abilities, I can be creative, my work is meaningful, the work is interesting, resulting in an alpha of .78.

Rewards Summary Scale consisted of: good pay, good job security, good fringe benefits and reported an alpha of .53. Given this low alpha, we decided to separate these items in later analysis to determine which of the three statements were most strongly related to job satisfaction.

The last Summary Scale, consisting of the remaining three questions, did not produce what might be a considered discrete task characteristic or dimension. However the literature suggests that role conflict and time pressure (House et. al., 1979 and Caplan et. al., 1980) were key variables in this discussion. As a result, time pressure and role conflict were included using; "never enough time", "in my job I can't satisfy everbody" and "free from conflicting demands". These three items had an alpha of .46 but were grouped together because of their postulated relationship.

To summarize, these scales are composite measures developed from a twenty-nine item job description scale. The five composite scales were created after a factor analysis was completed. Financial rewards and benefits were kept separate due to their low alpha. The time pressure summary score consists of items which did not factor into any of the other items but are included because of their salience to job satisfaction.

Job Satisfaction was measured using five separate questions: In general, how satisfied are you with your job? Would you chose the same type of work again? If you had an opportunity to take a similar job at the same pay in another organization would you take it or stay in your current job? How likely is it you will make a genuine effort to find a new job with another employer in the next job? I could get a better job if I quit working for the Post Office? These five scales have a reliability coefficient of .64 within the entire survey population. This study argues that items tap the worker's perceived level of satisfaction with the job, rather than either their planned or actual behaviour. The five were chosen because a myriad of factors, such as family relations or lack of job opportunities, could influence the workers actual behaviour.

After a review of the relevant literature, and considering the relatively low alpha for the five items, we decided to use only the question "In general how satisfied are you with your job?" as the dependent measure because it has been shown by other researchers to offer good variance between discrete groups of workers. We should also recognize that the survey only questioned those people who stayed with the job, which might inflate the job satisfaction scores, because those people who were very dissatisfied have probably already left the workplace. Presently, there is no way to study those people who have left, although this would be of great interest.

In summary, this study will use the data collected by the 1983 study of Edmonton Post Office Workers. A total of 1,529 employees were originally surveyed, of which 992 completed and returned the survey, an overall response rate of 65 percent. All members of both CUPW and LCUC were originally survey and therefore the results are of a total population rather than of a sample. In the following chapters significance levels are reported to test the possibility that some random process accounted for the observed differences among the two groups, the Coders and the Letter Carriers. It must be remembered that this was a survey of the total population, all Edmonton Postal workers, rather than a sample therefore any differences would be significant. All analysis was completed using version 2 of

SPSSx (Nie, 1983), the statistical analysis package currently operating on the University of Alberta's Amdahl computer system. The following section will examine the personal and work characteristics of the respondents to determine if there are any significant differences between the two groups.

C. Personal Characteristics of Respondents

In order to understand the two separate workgroups, it is necessary of get a general picture of the members' personal characteristics and their work history. The personal characteristics of the repondents may be expected, in some way, to influence their level of job satisfaction. Table 2 illustrates the personal characteristics of the survey's respondents.

The respondents were 55.1 percent male and 44.9 percent female (See Table 2). The Coders were 65 percent female while the Letter Carriers were 60.8 percent male. This difference was statistically significant at $p \geq .000$. Overall these unions are composed of a higher proportion of women than most other labour organizations. Statistics Canada reported that about 30 percent of all union members and about 34 percent of all public sector employees were women (Statistics Canada, 1982:62). Based on these results, sex must be considered as a control variable in further analysis.

Table 2
Characteristics of Respondents

CHARACTERISTICS	Work Groups CODERS	 LETTER CARRIERS	 TOTAL	SIG.
Gender				***
Male	35.5%	60.8%	55.1%	
Female	64.5%	39.2%	44.9%	
Mean Age (Years)	28.9	35.3	33.8	***
Mean Education (Years)	12.7	12.2	12.3	*
Martial Status				**
Single	45.7%	26.6%	30.9%	
Married or Common-Law	45.7%	66.9%	62.0%	
Divorced, Widowed, Separated	8.5%	6.6%	7.1%	
Mean Number of Dependent Children	.50	.78	.56	*
Number of Respondents	94	320	414	

* Difference among the two work groups was significant at $p \geq .05$, using a two tailed significance test.

** Difference significant at $p \geq .01$.

*** Difference significant at $p \geq .000$.

The mean age of the respondent was 33.3 years; Coders were 28.9 years of age while Letter Carriers were about 35.3 years old. This difference was significant. The average years of education was 12, with the Coders reporting 12.7 years of education although the difference was not statistically significant. About 62 percent of the respondents reported being married or living in a common-law relationship. Less than half of the Coders reported being married while 45.7 percent had never married. Only 26.6 percent of the Letter Carriers reported being single and this difference between the two groups may reflect their age difference. About 7.1 percent reported being divorced, widowed or separated but this result depended on the group, with 8.5 percent of the Coders being divorced, widowed or separated compared to 6.6 percent of the Letter Carriers. The present study includes 94 Coders and 320 Letter Carriers for a total of 414 respondents.

In summary, the typical Coder was female, younger, had been in school slightly longer and were evenly divided between the single and currently married categories. The Letter Carriers were predominately male, averaged 34 years of age, had been in school 12 years and were married. Clearly from Table 2, the factors of age and sex must be included in any further analysis given the dramatic differences between the two groups.

D. Past and Present Work Experience

The survey provided a detailed history of the respondent's past and present work experience and these data are reported in Table 3. Overall, Letter Carriers had over twice as much seniority with Canada Post as the Coders, an average of over ten years compared with 4.2 years (See Table 2 for average age). Both groups had been working in the Edmonton Post Office during their time with Canada Post, as the result of Table 3 indicate. The Letter Carriers had been employed in Edmonton almost ten years, only 5.8 months less than their total time with Canada Post. The Coders had also, on average, worked in the Edmonton Post Office 5 months less than their total time with the Post Office.

Turning to the average amount of time spent in the present job classification, the Coders had been in that classification for an average of 3.4 years while the Letter Carriers had been in the classification over nine years. Finally, the Coders had been employed in their current section or depot about three years, compared to the Letter Carriers almost six years.

These results suggest that most of the respondents tended to spend their time with Canada Post, at least at the time of the survey, in one location, ie. there is little movement been cities. The Coders had generally been employed half as long as other CUPW members. As a result, the Coders are less likely to have developed enough seniority to move into the more desirable positions with the main plant. On

Table 3
Respondents' Work Experience

		Work Groups		
Work Experience	CODERS	LETTER CARRIERS	TOTAL	SIG.
Mean Length of Employment (Months)				
With Post Office.	50.8	125.4	108.6	***
With Edmonton Post Office.	45.8	119.6	102.6	***
Present Job Classification.	41.1	108.3	93.0	***
In Present Section, Station or Deport.	33.6	71.9	63.0	***
Percentage of Employees Who Are Permanent.	96.6%	99.7%	99.0%	*
Percentage of Employees Who Work Part Time.	00.0%	6.6%	5.2%	*
Shifts				***
Day	28.7%	96.9%	81.4%	
Afternoon	41.5%		9.4%	
Night or Rotating	29.8%	3.1%	9.2%	
Mean Number of Months on Present Shift.	24.1	113.4	93.1	***
Average Overtime Hours Worked Per Week.				
Reported	5.1	.9	1.8	***
Unreported	.6	.2	.3	
Percentage of Employees Reporting 1 or More Problems with Hours Worked.	32.6%	15.0%	18.9%	**

Table 3 (Continued)
Respondent's Work Experience

Work Experience	Work Groups CODERS	 LETTER CARRIERS	 TOTAL	 SIG.
Specific Problems Reported:				***
Problem With Shifts	70.0%	18.0%	37.5%	
Problem with Overtime	13.3%	18.0%	16.3%	
Problem with Route Evaluation		42.0%	27.5%	
Problem with Hours Worked		14.0%	8.8%	
Other	13.3%	8.0%	10.0%	
Number of Respondents	94	319	413	

* Difference among the three work groups was significant at p≥.05, using a two tailed significance test.
** Difference significant at p≥.01.
*** Difference significant at p≥.000.

the other hand, the Letter Carriers have a long period of association with the Post Office and likely could have moved into other positions if they were so inclined. The fact that the Letter Carriers have been in their current job for as long as they had indicates that this group, on the whole, is generally satisfied with the job. Correspondingly, if the Coders have not had enough time to move into more desirable positions, their job satisfaction scores might be lower. The Letter Carriers, since they have had this opportunity and have not moved, should be more satisfied with their job, although this is speculative.

Very few of the Postal workers were temporary, with an average of 99.0 percent of survey respondents being permanent employees. It is possible for an employee to be classified as permanent part-time and about 6.6 percent of the Letter Carriers reported belonging to this category, compared to none of the Coders. These people worked an average of 23.3 hours per week, with the four Coders who answered this questions reporting an average work week of 32 hours. The four Coders who answered this question may have been unsure of the question since no Coders reported working part-time. In general, the respondents were permanent employees who did not work part-time. Given the fact that these data are questionable with regards to the Coders and that very few of the Letter Carriers reported being temporary, these variables will be excluded from later analysis.

Turning now to the question of shifts, the survey respondents worked significant different shifts depending on their jobs. Only 28.7 percent of the Coders worked during the day, compared to 96.9 percent of the Letter Carriers. Approximately 41.5 percent of the Coders worked in the afternoon, as compared to none of Letter Carriers. Only 3.1 percent of Letter Carriers worked during rotating or night shift, compared to 29.81 percent of the Coders. Coders had been on this shift an average of 24 months and LCUC members over 113 months. This indicates that the LCUC workers have been on their present shift longer and therefore had more time to adapt to the routine, as well as 96.9 percent of them working only during the day shift. The Coders on the other hand, were more evenly distributed over the three shifts and had been working these shifts for less than four years. The Coders worked about 5.1 hours of reported overtime per week, and .6 hours of unreported overtime per week. This is over five times as much overtime as the Letter Carriers reported.

Almost one-third of all Coders reported a problem with the hours they worked, compared to 15 percent of the Letter Carriers. Of the Coders who reported a problem with the hours they work, 70 percent identified shifts and overtime hours, supporting the hypothesis that shift work was indeed a problem. About 15 percent of the Letter Carriers reported a problem with the hours they worked, which included shifts, overtime and a problem with route evaluation. The Letter

Carriers have a specific route to complete each working day and are given so much time to deliver their mail based on the amount of walking and the number of stops to be made. About 42 percent of the Letter Carriers reported this route evaluation as a major source of problems with the hours they worked. In summary, the Coders reported problems stemming from the shifts they worked while the Letter Carriers reported that their major problem was route evaluation and then shifts. This is the first indication that task characteristics created specific problems for members of that group.

E. Summary

It is clear that there are significant differences in the personal characteristics and work experience of the members of the two work groups. The Coders are typically female, younger and have slightly more education. They have been employed by Canada Post for less time and report more problems with shifts while working more overtime than other postal workers. The typical Letter Carrier is predominately male, six years older than the Coders, has completed less education, and is married. They had been with the Post Office over twice as long as the Coders, 125.4 months versus 50.8 months, worked predominately day shift and worked little overtime. Only 15 percent of the Letter Carriers suggested that they had any problems with the hours they worked, with these problems consisting of shift, overtime and route evaluation. Over 32 percent of the Coders reported problems with the hours they worked, dealing almost exclusively with the shift they worked.

In the following analysis, because of the two group's differences in age and sex composition, these variables will be used as controls in an effort to minimize the effects of age and sex on the results. The work experience results suggest that because the Coders as a group have been employed less time with the corporation and as a result they have been unable to move into "better", ie. more satisfying positions, since they are forced to compete for these positions against more senior workers.[4]

In the following chapter, the subject of task characteristics and job satisfaction, as it relates to the Post Office will be investigated. This is critical since the basis of this research is that the two groups will preceive their jobs as having different characteristics when measured on the task characteristics scales. Also the chapter will describe the job satisfaction scales and link them to task characteristics.

---

[4] The area of past work experience within Canada Post, for example where workers were previously employed in the Post Office, was not fully investigated by this study. It would be interesting to determine if people in the jobs perceived as more satisfying and less stressful had been Coders earlier in their working careers.

IV. TASK CHARACTERISTICS AND JOB SATISFACTION

The last chapter documented the differences between the Coders and the Letter Carriers in terms of their personal characteristics and work experiences. This chapter will investigate each group's perception of their task characteristics and their reported level of job satisfaction. We will also examine the relationship between the dependent variable (job satisfaction) and independent variables (task characteristics, work experience and personal characteristics). By doing so, we will gain a more complete understanding of how the Coders and Letter Carriers perceive their jobs and, more importantly, how the two groups differ in their perceptions of job satisfaction. This study hopes to document which task characteristics are major contributing factors towards an individual's reported level of job satisfaction.

In theoretical terms, authors such as Caplan et. al. (1980), Baron and Bielby (1982), Gardell (1980a), Kohn and Schooler (1982) and Levi et. al. (1981) will be examined to gain an understanding of the work characteristics they have found to be related to routinization and job satisfaction. Finally, the results from the five job satisfaction measures will be analyzed to determine if there are any differences in the two groups' level of job satisfaction. It is expected that task characteristics will strongly influence the reported level of job satisfaction. The theoretical significance of this study will be its clarification of the concept of routinization by suggesting relevant empirical definitions. Secondly, we attempt to find evidence of the links between task characteristics and job satisfaction. As was shown in the literature review, this is still an area of controversy. This information could be used, on a practical level, to improve the worker's job satisfaction and their overall quality of working life by adjusting the task characteristics to maximize workers' job satisfaction.

Another theme which runs through this section concerns the question of the degree of control workers exercise over the production process. This is a key issue in the recent labour process studies (Braverman, 1974; Thompson, 1983; Edwards, 1979) which address, on a theoretical level, the question of the degree to which workers control the production process operating in the contemporary workplace. This concept first became an issue at about the turn of the nineteenth century with the beginnings of the deskilling of the labour process. Before this time most products were constructed and assembled by a craftsman, who was responsible for each step in the work process. With the standardization of production techniques and the advent of the assembly line, control shifted to the supervisor and to the machine, who were responsible for the allocation of tasks and the direction of the work flow. This introduced a new element into the work process, direct supervision of the workers by an external agent. The result is that the typical blue collar worker may have no direct control over their day to day work operations. A caveat in our research is that this study measures lack of control, ie. routinization, which may be different from the amount of control.

These issues are not unique to the new labour process theorists such as Thompson (1983) and Edwards (1979). For instance, Perrow (1972) stated that the logical outcome of automated production systems is that technology becomes the supervisory element as the work becomes more automated. "The larger the machine, presumably the more people it replaces, and this eliminates rules about how workers are to interact and cooperate and coordinate their activities" (Perrow, 1972:24).

The level of task routinization has been strongly linked to the worker's reported level of satisfaction. The level of routization, which before the beginnings of the assembly line was a non-issue, has become important in explaining not only job satisfaction but also questions such as workers' physical and mental health (eg. Caplan et. al., 1980) and employee absenteeism and turnovers. The question of work routinization needs to be fully investigated to understand how the contemporary workplace, often typified by a highly rountized and structured work schedule, is affecting those working in this environment. The Post Office provides an excellent opportunity to investigate routinization since the two different groups, the Coders and Letter Carriers, work within the same general environment but have very different task characteristics.

A key difference between the the Coders and the Letter Carriers is in their relationship to technology. The Coders are machine-users and tenders, while the Letter Carriers use little or no technology to perform their daily tasks. The key element then is the two groups' relationship to machinery and the types of control which the machines introduce into the work process. Thompson (1983) argues that once the machine becomes the controlling agent, rather than the worker, as in earlier production system, or management, "the work quota is no longer laid down, negotiated and imposed by a human authority which remains open to argument, it is ordered by the machine itself, imposed by the inexorable programmed advance of the assembly line" (Thompson, 1983:147). Technology becomes the guiding agent of the production process with workers and managers being removed from control of the labour process. The machine becomes a proxy for management and is more difficult to resist. As machines in general, and especially computers, take more and more control in industry, the result can be a loss of workers' ability to control his/her job to the point of becoming an apendage to the machine. The result of this type of routinization is reduced worker control of the work process and, since job satisfaction may be related to control, an increased level of job dissatisfaction (Thompson, 1983:150). If this proposition is correct then the Coders' more mechanized production techniques should be related to lower job satisfaction.

A major empirical study by Caplan et al. (1980), underlined this relationship by finding that job dissatisfaction was most strongly related to

> "underutilization of skill and abilities, simple and repetitive work, low participation in making decision which affect one's work, job insecurity, and poor social support from one's immediate superior and from others at work" (Caplan et. al, 1980:i).

A low level of skill usage and a high level of repetitive work are task characteristics which define the Coders' overall job experiences. As a result, it can be expected that the Coders will report a high score on these measures, while the Letter Carriers will report a lower score, especially on the variety and challenge summary scale. These factors may be instrumental in contributing to the workers' overall level of job satisfaction. In summary, there has been a gradual shift in the control of the production process, in some industries, from the workers to management and technology with a possible corresponding decline in workers' level of job satisfaction.

A. Task Characteristics

As was reported in Chapter 3, this research used six summary scores and the three reward items, developed from twenty-nine items, to measure the characteristics of the work the two groups performed.

Caplan et. al. reported that supervision and "poor social support from one's immediate superior" (Caplan et. al., 1980:i) influenced the respondent's level of job satisfaction. Examining the type of work the Coders do, it is clear that their supervision is direct. Moreover, these workers are monitored electronically and from behind one-way mirrors. In contrast, Letter Carriers reported less direct supervision due to the fact that for a large part of the day they are on their delivery routes. Table 4 reports the summary score on the supervision measures. The Coders reported a summary score of 3.48, that is, they are likely to agree that their supervisor is competent. The Letter Carriers were more positive in their evaluation of their supervision since they reported a summary score of 4.41 on a scale of 1 "Strongly disagree", 4 "Neutral" and 7 "Strongly agree". The difference between the two groups was significant ($p \geq .000$). Given this major difference, it is clear that Coders do not perceive their supervisor as being as competent, helpful and/or supportive as do the Letter Carriers. Possibly, the element of continous personal and electronic monitoring, which the Coders experience and the Letter Carriers do not, may have an effect.

An explanation of this finding may be that more supervision implies less control over the work pace by individual workers. In a highly routinized environment, the supervision is more direct and the Coders are less likely to offer a positive description of their task characteristics. They therefore view their supervision more negatively than the Letter Carriers, who are generally free of supervision while they were out delivering the mail.

Table 4
Summary Scores of Task Characteristics

Task Characteristics[1]	Work Groups CODERS	 LETTER CARRIERS	 TOTAL	 SIG.
Supervision Summary Score	3.48	4.41	4.20	***
Variety/Challenge Summary Score	2.37	3.61	3.33	***
Work Intensity Summary Score	4.96	4.92	4.93	
Autonomy Summary Score	2.81	4.51	4.12	***
Pay is Good	5.93	5.26	5.41	***
Good Job Security	4.93	4.85	4.87	
Good Fringe Benefits	4.11	5.20	4.95	***
Co-Workers Summary Score	4.04	4.07	4.07	
Time Pressure-Role Conflict Summary Score	3.77	3.95	3.91	
Number of Respondents	94	318	412	

[1] This table reports the mean scores on a scale from 1 to 7, where 1 is "Strongly Disagree", 4 is "Neutral" and 7 is "Strongly Agree".

* Difference among the two work groups was significant at $p \geq .05$, using a two tailed significance test.

** Difference significant at $p \geq .01$.

*** Difference significant at $p \geq .000$.

Previous research has suggested that for a job to be satisfying, it should possess an element of variety and challenge. Baron and Bielby (1982:176,178) reported that skill requirements, which we did not tap, and variety are a direct measure of the routinization of the job and of the level of the complexity of the tasks. Kohn and Schooler (1982) also determined that challenge or occupational self-direction, was "facilitated or inhibited (by the) substantive complexity, closeness of supervision and routinization" (Kohn and Schooler, 1982:1259) of the job. These findings suggest that the amount of variety and challenge within a job is related to workers' overall level of satisfaction. One part of the concept of routinization therefore is a lack of variety or challenge in the workplace. In short, workers employed in highly routinized jobs will likely have a lower reported level of job satsifaction. It can be expected that the Coders will perceived that the variety (the number of different jobs they do) and personal challenge (the amount of creative effort required to perform a task) inherient in their tasks is low compared to the Letter Carriers and as a result they may report a lower level of job satisfaction.

One of the largest differences observed in Table 4 is between the Coders and the Letter Carriers on the variety/challenge summary score. As expected, Coders ranked their jobs as allowing very little variety and challenge (a summary score of 2.37). The Letter Carriers ranked their tasks as only slightly uncreative and have a variety of tasks to perform (summary score of 3.61). Again, these differences were significant (p≥.000). This provides strong evidence that the two groups are significantly different along a key measure of routinization, one which other researchers have linked to the level of employee job satisfaction.

To reiterate, routinization can be operationally defined as the lack of challenge in a job or the requirement that the same task is repeated over and over, coupled with a closeness of supervision. From Table 4 it is clear that the Coders report a significantly a lower level of variety and challenge, are more dissatisfied with their supervision and report less autonomy than do the Letter Carriers.

Locke (1976) reported that challenge was a critical element in a person's job satisfaction since it provided a sense of accomplishment when a challenge was successfully met (Locke, 1976:1320). Correspondingly, if the challenge was too great, this created job dissatisfaction because the individual was unable to fullfil the objectives. The underlying assumption is that the worker has some control over the outcome of the challenge. Highly routinized workers have the element of challenge effectively removed since they have no control over the production process. Locke (1976) illustrates that variety/challenge are critical elements in an individual's level of work satisfaction. As evidenced by Table 4, the Coders have a low level of variety/challenge and therefore can be expected to have a lower level of job satisfaction than Letter Carriers.

Turning to the next item, work intensity measures how hard and how fast individuals are required to work in a job. If individuals are required to work very hard for extended periods of time, it would be expected that they would report a higher level of work intensity. Both groups reported that their jobs required them to work relatively hard and fast, Coders' summary score of 4.96 compared with the Letter Carriers' score of 4.92. It may be possible that the two groups work quickly out of personal choice but it seems more likely that they are required to do so because of the way tasks are designed. One piece of evidence to support this is the fact that the major problem for Letter Carriers was their route evaluation. The route evaluation, as was stated earlier, was the route each Letter Carrier was allocated to complete during the work day.

Turning to the Coders, it is clear that these machine-paced workers are required to perform up to the standards of the equipment they operate. The Coders are also faced with the posting of the day's performance which might induce an element of competition and stress while pushing them to work faster. As a result, it can be expected that work intensity may be a factor in job satisfaction. Certainly the supervision, which has already been shown to more direct for the Coders, may prevent the lessening of the their work pace.

Similarily, both groups reported a nearly equal amount of work intensity, 4.96 compared to 4.92 for the Letter Carriers. Even so, the Coders still reported that they had to work faster and harder than their counterparts, although the difference was only .04. This may support the autonomous finding since it is possible that the Coders are not working harder out of choice but due to the work pace imposed by the equipment they operate.

If a job is heavily routinized, it can be expected that the workers would report that they had less automony (freedom to take breaks, deciding their work pace and responsibility in deciding how the job should be completed) than other jobs with more automony. The degree of automony has been shown to be linked to the level of job satisfaction since it indicates the amount of control over the production process the worker maintains. This proposition is supported by Table 4, which shows that the Coders reported an average score of 2.81 on the autonomy summary score, compared to 4.51 for the Letter Carriers.

This finding suggests that the Coders feel that they have very little control over their work while the Letter Carriers feel generally positive about their autonomy. This is to be expected given the fact that the Letter Carriers are away from supervision a good deal of the day and are generally free to decide specifically how their tasks are to be completed. The Coders, on the other hand, are under direct supervision all day, are assigned to work on a specific machine for that day and have a fixed production quota to meet.

Following the results of the earlier factor analysis, the financial items were examined separately. On the whole, both groups are generally positive regarding their financial rewards, that is the pay, fringe benefits and job security. The Coders were more positive in agreeing that their pay was good, compared to the Letter Carriers, 5.93 and 5.26. The Letter Carriers rated their fringe benefits more highly than the Coders, 5.20 and 4.11 respectively. The differences between the two groups were significant at $p \geq .000$ on these two items, despite the pay rates and benefits being relatively similar between the two groups. Both groups generally agreed that their job security was good, although the Coders reported a slightly higher level of agreement than the Letter Carriers, 4.93 compared to 4.85. This difference was not statistically significant.

The co-workers summary scale is a composite of two items, "do co-workers take a personal interest in you" and "are they helpful to you". These measure workers' perception of the level of social support they receive from other workers. This scale provides a picture of how well workers feel that they are getting along with their fellow workers and there is generally little difference between the two groups. Both groups are generally neutral regarding their co-workers, Coders' score of 4.04 compared to the Letter Carriers' summary score of 4.07. This is an interesting result in that the Letter Carriers spend a good deal of time alone while delivering the mail. As a result, one would expect them to rank their co-worker support as lower than that of the Coders, who work with the same people for the whole shift. The quality, as well as the frequency of social contacts, may influence this measure and could account for these results.

The neutral score the Coders reported can be attributed partly to the large amount of noise created by the mail sorting equipment which inhibits the Coders from having informal social contacts while working. A substantial number of the Coders add to that noise, and thereby increase the sense of isolation from other workers, by wearing portable radios. These devices may heighten the sense of isolation by adding music to the already loud noise of the operating machinery. These radios also indicate a certain amount of escapism from the current work situation since they provide a diversion from the job. Possibly the widespread use of "walkman" radios indicate a job adapation pattern which is being used by a large number of the Coders to escape the type of work they perform.

Finally, there is evidence to suggest that time pressure and role conflict may reduce the level of job satisfaction. The two groups feel that there are some time pressures, ie. there is not enough time in the day to get everything done, and some role conflicts. The Coders reported more time pressure and role conflict; 3.77, than did the Letter Carriers who reported a score of 3.95. The Coders are paced by the machines they operate and as a result feel that there are certain pressures to process a given volume of mail. Both groups' score would be expected to increase if the survey had been taken at peak periods in year for mail volume, for example Christmas or just before the end of April when income tax returns were due.

To summarize our discussion of task characteristics, generally the Coders reported very different perceptions of all aspects of their job when compared to the Letter Carriers. Especially prominent were the scales of supervision, variety/challenge and automony. These three items are directly linked to the work's level of task routinization since supervision indicates how closely the worker's actions are governed by an external source. The lack of variety/challenge is a hallmark of the routinized type of work structure with the employee required to tend the machine and to function as an extension of the machine. It is especially salient for those Coders who run the Optic Code Readers (OCRs) since all the Optic Code Readers require is someone to insert the mail in a bundle into the machine and remove the letters once the machine has processed the bundle, thereby reducing the workers to the role of machine tenders. The automony summary score showed the largest difference between the two groups as the Coders reported having very little decision-making power on their job while the Letter Carriers were relatively free to decide how their work was to be accomplished.

Overall, we can conclude that the Coders' work is highly routinized while the Letter Carriers perceive their job as more varied and open, in terms of the task characteristics. The next section will investigate the two group's scores on the job satisfaction scales and then determine if there is any relationship between the task characteristics of each group and their level of job satisfaction. This relationship is critical to identifing which aspects of the job are directly affecting the employee's level of job satisfaction. Only by knowing which characteristics strongly affect job satisfaction, can the workplace be altered to be more satisfying to the worker.

B. Job Satisfaction

The question of job satisfaction is a major concern in the occupational literature (Locke, 1976; Nightingale, 1982; Lowe, 1981; Burstein, et. al., 1975), especially given the growing concern with improving the quality of working life. It is necessary to understand the theoretical changes which job satisfaction research has undergone in the last seventy years to appreciate the present assumptions being used in this research.[5]

F.W. Taylor, possibly one of the earliest students of work motivation, felt that workers were rationally motivated individuals who wished "to have the highest possible earning with the least of fatigue" to be satisfied and productive (Locke, 1976:1298). This approach assumed that the worker was a totally rational being who weighed the costs against the benefits of performing the job and if those benefits outweighed the cost, the worker was satisfied. This approach ignored the cognitive and social elements of workers and fell into disfavour, largely due to the fact that the workers did not tend to react totally as rational beings. Taylor's research was directed towards increasing the productivity of the workforce and his assumptions regarding the factors motivating the worker held sway into the late 1930's. It was only when later research moved away from these ideas that the question of job satisfaction began to be studied.

---

[5] See Thompson, 1983, Chapter 5 for a thorough discussion of the aspect of control.

As a result of a desire on the part of managers to create a more productive, and satisfied, workforce and the failure of Scientific Management to accomplish this, industrial sociologist began to explore job satisfaction more fully. The Hawthorne research (1927-1932) (Rothelisberger and Dickson, 1939) established the ability of the group dynamics and social relations generally to influence the production process. They also investigated the effect of management styles in "shaping employee attitudes and performance" (Locke, 1976:1299). Their findings guided management practices for almost two decades with their emphasis on the strength of the work group to govern the productivity and satisfaction of the individual members

(Tausky, 1979).

The Human Relations school, which emerged from the Hawthorne studies, began to gain widespread prominence after World War II. By the early 1960's, industrial sociology began to move away from the group dynamics approach. This school of thought stressed the importance of leadership in developing a productive and therefore satisfied group of workers and advocated participatory management. This meant that workers were invited to assist in the development of the work process and shared control of the production process. This new development in industrial sociology met a good deal of resistance from management who saw this as a reduction in their control and authority.

The Human Relations approach gave rise to another view of job satisfaction which concentrates on the work itself as a factor in producing a more satisfied individual (Petty et. al., 1984). The major flaw in concentrating solely on task characteristics as the factor which results in a satisfied worker is that other variables, such as the worker's age, sex, and education all appear to have a minor bearing on the overall level of satisfaction (Tausky, 1979; Burstein et. al., 1975) Other research shows that external factors, such as the person's home life and social support network, will influence the way the job is perceive. Meissner (1971) has argued that satisfaction is not a unidirectional variable in that job satisfaction is linked to overall life satisfaction. We believe that since the respondents in this study have only the work they do in common, that this is a major underlying element in their job satisfaction, which is not to discard the possible effects of other sources of tension or dissatisfaction. Unfortunately this study lacked the background data to fully investigate external job factors and their impact on the respondent's reported level of job satisfaction.

Recall that we previously defined job satisfaction as a transient subjective state in which the worker assesses the achievement of his/her work goals (Kalleberg, 1977:127; cf. Locke, 1976:1300). This definition contains two separate dimension of job satisfaction, as reviewed in Chapter II above. First, in general how satisfied the individual reports being with their jobs (a direct global measure of job satisfaction). Second, do they like the job enough to try that type of work again (another aspect of job satisfaction). These two facets are viewed separately in that a worker may be very satisfied with his/her current position but still curious to "see if the grass is greener somewhere else", ie. to move to what is perceived as a more satisfying job somewhere else. The worker may also believe that although they intensely dislike their job, there are no better jobs available given the current labour market conditions. The second facet can be tapped if the respondent is questioned regarding whether or not they have actively searched for a job within the last year. This reveals their perception of the job, in addition to the individual's understanding of the current labour market situation.

We utilized five separate measures of job satisfaction in an effort to measure workers' overall level of job satisfaction and the type of action they would take if they had an opportunity to change their jobs. Table 5 reports the results of these five job satisfaction measures. Clearly the Coders are less satisfied with their jobs than the Letter Carriers, 3.71 compared to 5.24 on a general job satisfaction scale of 1 "Very Dissatisfied", 4 "Neutral" to 7 "Very Satisfied". These results were significant at $p \geq .000$. This suggest that, for whatever the reason(s), the Letter Carriers were much more satisfied with their jobs than were the Coders. The second measure strongly confirms this finding with a full 63 percent of all Letter Carriers willing to chose the same type of work again. Only 26 percent of the Coders would choose that type of work again.

The third variable, "Would you take a similiar job at the same pay in another organization", measures workers' satisfaction with Canada Post rather than with the work itself. Once again, the Letter Carriers are generally satisfied with the organization as only about 27 percent of all Letter Carriers would change organizations while remaining in the same jobs. The Coders, on the other hand, are about equally split between liking the job and disliking the Post Office and disliking the job and liking the organization. Possibly this is due to the widely known militancy of the Coders' union, the Canadian Union of Postal

Table 5
Job Satisfaction Scores

	Work Groups			
Job Satisfaction Measures	CODERS	LETTER CARRIERS	TOTAL	SIG.
Overall Satisfaction Score[1]	3.71	5.24	4.89	***
Percentage Who Would Chose the Same Type of Work Again	26.4%	63.4%	55.0%	***
Percentage Who Would Take A Similiar Job at the Same Pay in Another Organization	51.1%	26.6%	32.1%	***
How Likely Is It You Will Make a Genuine Effort to Find A New Job With Another Employer in the Next Year[2]	2.98	2.16	2.35	***
I Could Get A Better Job If I Quit Working For the Post Office[3]	3.19	2.89	2.96	
Number of Respondents	94	318	412	

[1] This Question reports the mean scores on a scale from 1 to 7, where 1 is "Very Dissatisfied", 4 is "Neutral" and 7 is "Very Satisfied".

[2] This Question reports the mean scores on a scale from 1 to 7, where 1 is "Very Unlikely", 4 is "Neutral" and 7 is "Very Likely".

[3] This Question reports the mean scores on a scale from 1 to 7, where 1 is "Strongly Disagree", 4 is "Neutral" and 7 is "Strongly Agree".

* Difference among the two work groups was significant at $p \geq .05$, using a two tailed significance test.

** Difference significant at $p \geq .01$.

*** Difference significant at $p \geq .000$.

Workers, compared to the less militant Letter Carriers's union, Letter Carriers Union of Canada (Parrot, 1984). Taking the last two variables into account, chosing the same type of work again and moving into a different organization, it is clear that the Coders are less satisfied with their present job when compared to the Letter Carriers.

The fourth question, "How likely are you to make an effort to find another job within the next year", is a measure of the workers perception of the labour market as well as their level of dissatisfaction. Those workers who are very dissatisfied would be likely to actively seek another job even if the prevailing market conditions were poor. Table 4 illustrates that the Coders are significantly (2.98 compared to 2.16) more likely to search for another job but generally both groups are constrained by their perceptions of the number of available "better" jobs. Given that this this survey was completed during the 1982-1983 recession, it seems unlikely that either group was likely to try to find another job at that time.

The last job satisfaction item tries to estimate the respondent's level of job satisfaction while considering the constrains of existing labour market conditions. The Coders are more likely to agree that they could get a better job if they quit the Post Office, a score of 3.19 compared to the Letter Carriers' score of 2.89. Again, both groups are generally negative in terms of this question possibly because of the general perception that there were not that many better jobs available at the time of the survey because of the recession.

In summary, it appears that the Coders are less satisfied with their jobs in general, less likely to chose the same type of work again and more likely to be dissatisfied with the Post Office than the Letter Carriers. Both groups were, on average, unlikely to try to find another job within the next year, indicating that they perceived that, at the time of the survey, there were few better jobs available. Also both groups may lack current, accurate information regarding the present labour market conditions.

To understand the Postal Worker [illegible] job satisfaction scores it is necessary to compare them to a other groups of workers. Through the use of Edmonton Area Survey (E.A.S.) data, as reported by Lowe et. al. (1984), we can gain an understanding of the Postal workers' level of job satisfaction in comparison to a larger population (Table 6). The Postal study and the 1983 Edmonton Area Study contained identical job satisfaction questions so the findings are directly comparable. Our analysis of the E.A.S. data set found that 82 percent of the sample responded positively to the general question "how satisfaction are you with your job", compared to 64.4 percent of the Postal workers. Turning to the two groups of Postal workers, we see that 29.8 percent of the Coders reported at least some positive job satisfaction, compared to 74.5 percent of the Letter

Table 6
Postal Workers' and E.A.S. Respondents' Job Satisfaction Scores

	Postal Workers			
Job Satisfaction Measures	**CODERS**	**LETTER CARRIERS**	**TOTAL**	**E.A.S.**
Overall Satisfaction Score[1]	29.8%	74.5%	64.4%	82.0%
Percentage Who Would Chose the Same Type of Work Again	26.4%	63.4%	55.0%	60.0%
Percentage Who Would Take A Similiar Job at the Same Pay in Another Organization	51.1%	26.6%	32.1%	17.0%
How Likely Is It You Will Make a Genuine Effort to Find A New Job With Another Employer in the Next Year[2]	26.6%	14.1%	17.1%	24.0%
Number of Respondents	94	318	412	173[3]

[1] Percentage of respondents who reported at least some job satisfaction.

[2] Percentage of respondents who reported that it was at least somewhat likely that they would look for another job.

[3] Selected white collar and blue collar sub-sample of 1983 E.A.S. Survey.

Carriers. The Coders are considerably less likely to report that they were satisfied with their job than the population. The Letter Carriers, on the other hand, reported job satisfaction at a level similar to the population as a whole. The Coders reported an extremely low level of job satisfaction when compared to either the Letter Carriers or the general Edmonton population.

The difference between the Coders and the general population is made more dramatic if one compares the Coders to the 1969, 1973 and 1977 Michigan studies as reported by Quinn and Staines (1979). These researchers found that, depending on the year, between 85.5 percent and 90 percent of their sample of the American working population reported being at least somewhat satisfied with their job (Quinn and Staines, 1979:210), in contrast to 29.8 percent of the Coders. In addition, the Canadian Work Values Study found that 89 percent of their sample of Canadian workers were at least somewhat satisfied with their jobs (Burstein et. al., 1975:28). Clearly the Coders are less satisfied with their job than would have been expected in a randomly selected sample of North American workers. The magnitude of the difference between the Coders and the rest of the working population suggests that they are very dissatisfied with their jobs compared to the general population.

The second question on Table 6 shows that there are significant differences between the two groups of Postal workers and the general population regarding whether they would chose the same type of work again. About 26.4 percent of the Coders would chose their present job again, compared to 63.4 percent of the Letter Carriers. Approximately 60 percent of the general Edmonton population reported that they would chose the same type of job again.

While 17 percent of the E.A.S. sample would take a similar job in another organization, over half of the Coders would do so, compared to 26.6 percent of the Letter Carriers. This indicates that the Coders are much less satisfied with the organization they current work for either the Letter Carriers or the general population. There may be two explanations for this, one that the Coders are more militant than the Letter Carriers and therefore less satisfied with Canada Post. This explanation is supported in the article by J.C. Parrot, CUPW's national leader, who stated that the 'struggle' should continue against Post Office management (Parrot, 1984). Second, there may be task characteristics, which are specific to the Coders, such as the closeness of supervision or lack of autonomy, which may be related to their desire to leave the organization.

In line with their relatively low level of job satisfaction, the Coders were more likely to feel that they would make a genuine effort to find another job in the coming year than either of the other two groups. About 26.6 percent of the Coders replied that they intended to do so, compared to 14.1 percent of the Letter Carriers, who reported a significantly higher level of job satisfaction.

When compared to the general working population, it appears that the Coders are closer to representing the norm of 24 percent than the Letter Carriers. This may be in fact a measure of just how satisfied the Letter Carriers are, since they were quite a bit less likely, than the general population, to feel that they would be searching for another job in the next year. All three groups' low level of planning to seek another job may have been due to the fact that these surveys were taken in the midst of the 1982-1983 recession when the unemployment rate was higher than average. Possibly therefore there was feeling prevalent in the population that there were few jobs available. This question could easily be addressed by conducting a follow-up study to determine if a higher percentage of Coders, Letter Carriers and the population as a whole are now planning to actively seeking another job.

To summarize Table 6, it appears that a much smaller percentage of the Coders were satisfied with their job than would have been expected in the population. The Coders, in comparison to other groups, were not satisfied with their jobs, did not like the work specifically nor the organization they worked for and were slightly more likely to actively try to find another job. The Letter Carriers on the other hand, seemed to strongly like the work, irregardless of the organization they worked for and possibly as a result, were unlikey to want to find another job.

In an effort to reduce the the number of dependent variables, an analysis of the five job satisfaction items was undertaken. Table 7 indicates that the five items do not correlate strongly with each other or with work group. This suggests that the five items were different dimensions of an individual's overall subjective experiences of work. Certainly other researchers may wish to investigate these separate elements within job satisfaction, in an effort to more fully assess the impact of the four job satisfaction questions on the global job satisfaction measure. We have chosen to use a single, global measure which is entirely consistant with other reseach in the area of job satisfaction. In particular, Petty et. al. found that the global type of job satisfaction measure, rather than facet-specific measures, was most strongly related to job performance (1984:719). Secondly, as was stated earlier, the inter-item reliability coefficient between the five job satisfaction measures was a little low, especially for a dependent variable, (alpha=.64) to allow the five items to be used as a single scale. Other researchers may wish to examine various facet-specific measures to determine the causal relationship between satisfaction and the more specific measures. This type of research would further enhance our understanding of the complex interrelations between job satisfaction and its various facets.

An initial regression equation was performed in an effort to determine the ability of the global facet-specific

Table 7
Correlation Matrix of Job Satisfaction Measures and Work Group With The Global Satisfaction Item

Measure	1	2	3	4	5	6
1. Global Satisfaction	1.00	.49	-.22	.38	-.28	.39
2. Would You Chose the Same Type of Work Again?		1.00	-.30	.30	-.25	.31
3. How Likely Is It You Will Make a Genuine Effort to Find A New Job With Another Employer in the Next Year?			1.00	-.24	.30	-.17
4. Would You Take A Similiar Job at the Same Pay in Another Organization?				1.00	-.12	.22
5. I Could Get A Better Job If I Quit Working For the Post Office.					1.00	-.08*
6. Work Group (1=Coder, 2=Letter Carrier)						1.0

Number of Respondents 412

*P≥.05, all other Pearson Correlations are significant at p≥.00.

job satisfaction measures to predict the global facet-free item. Table 7 found that 36 percent of the variance in the global job satisfaction item could be explained using the other four job satisfaction items and work group. Given that 64 percent of the variance in the global job satisfaction item, "in general how satisfied are you with your job", could be not be explained by the the other measures, it was decided to use the global job satisfaction item as the dependent variable for the rest of the analysis. This decision follows similiar analysis by Gruenberg (1980), Lemkau and Pottick (1984), Jurik and Halemba (1984) and Murray and Atkinson (1981) who all used a single, global job satisfaction item as the dependent measure of job satisfaction. A regression equation, completed in Table 8, found that chosing the same type of work again was strongly related to the global job satisfaction measure.

In summary, the Coders are considerably less satisfied with their current job than the Letter Carriers. They are less likely to choose the same type of work again and more likely to be dissatisfied with the Post Office as an organization. It is possible that this dissatisfaction with the Post Office is a function of their work rather than any specific policies of the organization. It is also possible that the Coders are a more militant group, being younger, under constant direct supervision and having less automony and as a result are more dissatisfied with the organization as a whole. The next phase of the research will investigate

Table 8
Regression of All Job Satisfaction Measures and Work Group On The Global Satisfaction Item

Variable	b	SE b	Beta	r	Sig.
Work Group	1.0199	.1757	.2561	.39	.00
Would You Chose the Same Type of Work Again?	1.6679	.1453	.4998	.49	.00
Would You Take A Similiar Job at the Same Pay in Another Organization?	.7576	.1540	.2128	.38	.00
I Could Get A Better Job If I Quit Working For the Post Office.	-.1528	.0417	-.1521	-.28	.00
Constant	1.7409	.3434			.00
Summary R^2	.3639				
Number of Respondents	412				

the link between the worker's level of job satisfaction and the characteristics of their jobs. More specifically, we will test the central research question of whether or not task characteristics are directly related to job satisfaction and if so, in what ways.

C. Job Satisfaction and Task Characteristics

The last chapter suggested that there are significant differences in the personal characteristics of the two groups, the Coders and Letter Carriers, namely in their composition by sex, by age and length of time on the job. The Coders are typically younger females, who had worked for the Post Office for less time than the older, predominately male, Letter Carriers. Since it is now clear that there are important differences in the personal, work experiences and perceptions of task characteristics of the Coders and Letter Carriers, it necessary to examine the inter-relationship between task characteristics and job satisfaction. In doing so, we will gain a more complete understanding of how each group perceives the job and how that perception is related to job satisfaction.

The relationship between job satisfaction and the demographic and task characteristics of the two groups will be estimated through the use of two separate regression equations. The purpose of the first regression equation is to examine the overall effect of task characteristics while controlling for personal characteristics and work group. The regression equation answer two questions; first, whether or not work group has any effect on the level of job satisfaction, and second, do personal characteristics have an effect on job satisfaction, while controlling for task characteristics and work group. Finally, the regression analysis will suggest if task characteristics have an effect on job satisfaction, while all other variables are held constant. This will be done by entering three separate blocks of variables (work group, personal characteristics, work experiences and task characteristics) into a stepwise regression equation. This will force work groups into the equation first, followed by personal characteristics and finally by task characteristics. By following this procedure we can determine if specific job or personal characteristics have an effect on the global job satisfaction measure of "in general, how satisfied are you with your job". Given the findings of previous researchers, the first regression is the next logical step in the analysis of the Postal data.

The second regression equation will examine the Coders and Letter Carriers separately to determine if different job characteristics may be influencing the final job satisfaction score for each group. This will indicate if different factors are related to each group's global job satisfaction score. Variables, such as age (Rinehart, 1978; Burstein et. al., 1975; Wright and Hamilton, 1978) sex (Burstein et al., 1975; Murray and Atkinson, 1981; Miller, 1980), education (Zeitz, 1983; Glen and Weaver, 1982) and length of time on the job (Caplan, et. al., 1975), just to name a few, may be related to the final job satisfaction item. This is a post-hoc analysis and therefore there are no hypothesis as to the direction of the slopes. Finally, a z score will be computed to determine if there are significant differences between partial slopes.

Table 9 reports a reduced form equation and suggests three major observations. The first finding is that work group accounted for 14 percent of the variance in job satisfaction, in the first step. Once task characteristics are introduced however, work group dropped to explaining 5.07 percent of all the variation in job satisfaction. This was calculated by multiplying the zero order correlation by the beta weight. For example, the beta weight of work group was .1334, and the zero-order correlation between work group and job satisfaction was .38 therefore .1334X.38=5.07%. This is the total amount of variance in job satisfaction explained by work group. By using the same equation and dividing it by the R^2 we can determine what percentage of the change in R^2 was due to work group. For example .1334X.38/.5008=10.1%, therefore 10.1 percent of the R^2 was attributable to work group. Note the difference between the two equations. About 5.1 percent of the variance in job satisfaction was linked to work group, while 10.1 percent of the total R^2 was attributable to work group. The R^2 change for work group at first glance appears to be high but this was due to the fact that it was forced into the regression

Table 9
Regression of Work Group, Personal Characteristics and Task Characteristics On The Global Satisfaction Item*

Variable	b	SE b	Beta	r	R^2 Change	Sig
Work Group	.5523	.1947	.1334	.38	.1410	.00
Task Characteristics						
Variety/Challenge Summary Score	.483	.0514	.4166	.58	.2240	.00
Pay is Good	.297	.0472	.2532	.25	.0891	.00
Supervision Summary Score	.276	.0640	.1868	.45	.0353	.00
Autonomy Summary Score	.150	.0540	.1328	.47	.0114	.01
Summary Constant	-.5408	.3557				.13
Summary R^2	.5008					
Number of Respondents	344					

* Only variables which are significant at or above $p \geq .05$ are reported. As a result the personal characteristics of; **age, sex, marital status, education,** and the work experience characteristics of; **Time With Post Office, Time with Edmonton, Post Office, Time at Classification, Time In Section, Time On Shift, Preferred Shift, Overtime Hours Per Week,** were not included in the equation. The Task Characteristics of; **Time Pressure-Role Conflict, Co-workers, Work Intensity, Fringe Benefits and Job Security** were also not included.

Note: Reduced Form Equation

equation first and this resulted in a large change in the R^2.

Even after the addition of task characteristics about 5 percent of the change in job satisfaction was still attributable to work group. Work group is therefore still a significant variable in the equation, possibly because it is a proxy for other unmeasured aspects of the job.

The second major observation is that the personal characteristics of the two groups did not have a significant net effect on job satisfaction. A probability level was set at .05 and none of variables found by other researchers to be significant (age, sex, marital status, education, length of time on the job, or amount of overtime) entered into the equation. This supports other research in that these characteristics have only been found to have very small effects in large samples (Burstein et. al., 1975; Murray and Atkinson, 1981; Miller, 1980).

The final observation supports the hypothesis that task characteristics are a major contributing factor in job satisfaction. About 24.2 percent of the total variance in job satisfaction can be explained by the degree of variety and challenge within a job. This variable explains about 48.3 percent of the R^2. From the slope (beta=.4166) we also see support for the proposition proposed earlier that as the amount of variety and challenge increases in a job, so does the level of job satisfaction. We may also be able to assume therefore that as the job's variety and challenge decreases, so does the level of job satisfaction. Given this result, the Coders, who had a lower level of variety and challenge, have a lower level of job satisfaction, even after all other variables are held constant.

The importance of the pay being preceived as good is also stressed in Table 9, explaining about 6.4 percent of all the variance in job satisfaction independent of work group and personal characteristics. Good pay accounted for about 16.8 percent of the change in the R^2, meaning that it was second only to variety/challenge in percentage change of R^2. We see a moderate relationship (beta=.2532) in that the better the pay is perceived, the greater the likelyhood that there will be an increase in job satisfaction.

The type of supervision is also shown in Table 9 to be positively related to job satisfaction (beta=.1868), explaining about 8.4 percent of the change in job satisfaction. In general if workers felt that their supervisor was competent, then they are more likely to be satisfied with the job in general.

The third largest task characteristic effect was due to the autonomy summary score (beta=.1328). About 6.2 percent of the variance in job satisfaction was due to the level of autonomy an individual was given on the job. This variable accounted for the remaining 12.5 percent of R^2. Although the zero-order correlation was high, it appears that there was only a weak positive relationship between an increase in autonomy and an increase in job satisfaction.

The remaining task characteristics; time pressure-role conflict, work intensity, co-workers, fringe benefits and job security did not enter into the regression equation.

In total, work group and four task characteristic items explained 50.08 percent of all the variance in job satisfaction. Although there are clearly other factors in operation, half of the total variance in job satisfaction can be explained by the five items.

In summary, Table 9 indicates that four task characteristics explain about 45 percent of the change in job satisfaction. The difference between work groups accounts for about 14 percent of the change in job satisfaction initially but when task characteristics are added into the equation, this declined to 5.1 percent. This indicates that other variables such as the overall work environment, the union, and the different physical settings, which are not measured by this survey are still accounting for some of the change in satisfaction. Over 31 percent of the change in job satisfaction, and about 60.7% of the total R^2, were attributable to variety and autonomy. These two variables can be linked to the level of routinized work, since as we have shown earlier, satisfying work is believed to be varied and challenging, while containing an element of autonomy. If this proposition is correct then, in the next regression equation these two variables should have a significant effect on the routinized workers', ie. the Coders', level of job satisfaction while having less, or no effect on the non-routinized Letter Carriers. The next section will estimate the same regression equation for each work group to determine if there are different determinants of job satisfaction amoung Coders and Letter Carriers.

D. Job Satisfaction and Task Characteristics by Group

Given that we have documented a significant difference in the personal and task characteristics of the two groups, it is useful to extend the analysis to study how specific job characteristics influence the satisfaction level of each group. Clearly from Table 9, we see that work group is an important variable in explaining job satisfaction. The next step in the analysis will examine the work groups individually to determine the different factors affecting job satisfaction. Previous research (Thompson, 1983) has examined workers as a homogeous group but it is possible that work groups respond differently to the production process and report different job satisfaction levels. This step moves beyond simply looking at the correlates of job satisfaction and attempts to determine, for specific types of work groups, which task characteristics influence job satisfaction. Consequently we estimated a regression equation, including all the Table 9 variables with the exception of work group, for the Coders and the Letter Carriers separately. In these two regression equations all variables were entered simultaneously to determine which were the most critical in explaining the job satisfaction for either the Coders or the Letter Carriers. We will separately discuss the two groups, looking at the task characteristics which effected each group's level of job satisfaction.

Coders

Looking at the results of Table 10 for the Coders, we see that personal characteristics had no significant effect on their level of job satisfaction. The only variable with a relatively large beta was marital status (beta=.3252, significance=.09). The relationship, although it was not significant, indicated that if the Coders were married, then they were more likely to feel satisfied with their jobs. Again this is at best a tenious relationship.

Turning to the Coders' work experiences, Table 10 indicates that months on shift and overtime hours per week were related to job satisfaction. The longer they had been on a particular shift, the more likely they were to be satisfied with the job (beta=.3669). Although the beta was high, because the zero-order correlation was low, r=-.0689, the length of time on shift explained about 2.53 percent of the variance in job satisfaction and accounted for 3.7 percent of the change in the Coders' R^2.

This finding supports the work of Levi who reported that "the endocrine system does indeed start to adapt to the environmental demands induced by shift work" (Levi et. al., 1981:22) after approximately three weeks. Possibly the

Table 10
Regression of Personal Characteristics, Work Experience and Task Characteristics On The Global Job Satisfaction Item By Work Group

Variable	Global Satisfaction Measure									
	Coders				Letter Carriers				Difference	
	b	Se b	Beta	Sig	b	Se b	Beta	Sig	Z	Sig[1]
Personal Characteristic										
Age	-.0205	.0304	-.0933	.50	-.0127	.0124	.0966	.31	-.2376	.82
Sex	-.2007	.3411	-.0601	.56	.0725	.1789	.0232	.69	-.7093	.48
Marital Status	.3252	.1872	.1903	.09	-.0331	.0841	-.0195	.69	1.7459	.08
Education	-.0579	.1282	-.0504	.65	-.0706	.0658	-.0564	.28	.0881	.93
Work Experience										
Length of Time With Post Office	-4.13*	.0112	-.0825	.71	-8.40**	3.80*	-.0561	.83	-.0294	.98
Months With Edmonton Post Office	-5.53*	.0163	-.1043	.74	6.52**	2.13*	.0427	.76	-.0379	.97
Months At Classification	.0143	.0118	.2224	.23	-1.45*	3.30*	-.0970	.66	1.2237	.22
Months At Section Or Station	-.0163	.0149	-.2619	.28	8.00+	1.49*	4.08*	.96	-1.0944	.28
Preferred Shift	.1588	.2175	.0701	.47	-.0885	.2093	-.0204	.67	.8193	.41
Months On Shift	.0350	.0109	.3669	**.00**	1.14*	2.86*	.0764	.69	**3.1994**	**.00**
Overtime Hours Per Week	.0702	.0252	.2758	**.01**	-.0314	.0271	-.0562	.25	**2.7455**	**.01**
Task Characteristics										
Supervisor Summary Score	.3844	.1870	.2728	**.05**	.1735	.0811	.1189	**.03**	1.0347	.30
Variety/Challenge Summary Score	.7039	.1661	.4653	**.00**	.4619	.0630	.4187	**.00**	1.3623	.17
Work Intensity Summary Score	.2052	.1234	.2026	.10	-.0862	.0550	-.0823	.12	**2.1569**	**.03**
Autonomy Summary Score	.2855	.1425	.2319	**.05**	.0851	.0650	.0716	.19	1.2795	.20
Pay is Good	.2603	.1769	.1781	.15	.2217	.0631	.2121	**.00**	.2055	.84
Co-Workers Summary Score	.0122	.1165	.0119	.92	.1184	.0573	.1127	**.04**	-.8180	.41
Time Pressure-Role Conflict Score	-.0407	.1892	-.0215	.83	-.0805	.0807	-.0526	.32	.1935	.85
Job Security is Good	1.06*	.1046	1.04*	.99	.0577	.0512	.0625	.26	-.4945	.62
Fringe Benefits are Good	.1339	.0961	.1589	.17	.0276	.0610	.0249	65	.9339	.35
Constant	-3.5263	2.017		.09	1.8822	.8174		.02	**-2.4847**	**.01**
Summary R^2	**.6837**				**.4556**					
Number of Respondents	69				274					

[1] The significance of the difference between the Coders and the Letter Carriers regression coefficients is assessed using a two tailed z test where:

z = (bcoders - blettercarriers)/ square root (SE b^2Coders + SE b^2Letter Carriers)

* =E-03

**=E-04

+ =E-05

longer the individual had worked a particular shift, the more time the worker had to adapt to the physical and psychological demands of that shift. With this adaption comes an increase in the level of job satisfaction. A second explanation might be that the Coders are a self-selected group in that those workers who did not like working shifts, left the group. This seems unlikely though given that the regression controlled for length of time on the job.

The Coders also reported that the more overtime hours per week they worked, the greater their job satisfaction. This was unexpected since we assumed that if workers were not satisfied with their job, they would want to work only the required number of hours. This item (beta=.2758) explained about 3 percent of the variance in job satisfaction. Possibly since overtime is related to an increase in take-home pay, overtime hours provide workers with a chance to earn extra money. Making extra money might be viewed positively therefore an increase in overtime hours was directly related to job satisfaction.

The strongest relationship between job satisfaction and all the variables in Table 10 was between job satisfaction and variety/challenge. As the amount of variety and challenge in a job increased, so did the Coders' level of job satisfaction. The Coders' beta of .4653 indicates that 27.5 percent of the total variance in their job satisfaction was accounted for by this item alone. Variety/challenge explained about 40.2 percent of the Coders' R^2, suggesting that it is a strongly related to job satisfaction. Looking at the slope, we see a strong positive relationship between job satisfaction and variety/challenge. This finding is consistent with research described earlier which found that the more varied and challenging the tasks, the greater the workers' level of job satisfaction.

The fourth significant relationship for Coders is that supervision was weakly related to job satisfaction (beta=.2728). For the Coders, whether or not the supervisor was perceived as being competent and helpful had a weak effect on the job's level of satisfaction, accounting for about 15.3 percent of the variance in job satisfaction. A possible explanation may be that they are in constant contact with their supervisors during the day, so that viewing the supervisor as competent and helpful was related to an increase in work satisfaction.

Finally, there was a relationship between the Coders' level of autonomy and job satisfaction (beta=.2319). This item explained about 5.7 percent of the total change in job satisfaction and about 8.3 percent of the Coders' R^2. This supports the proposition put forward earlier that the greater the autonomy of the worker, the more likely that they would be satisfied with the work.

For the Coders, a very substantial 68 percent of the variance in job satisfaction can be predicted by using five significant items; shift, overtime hours per week, variety/challenge, supervision and autonomy. About 28 percent of the change in job satisfaction, and 48 percent of the total R^2, was linked to the amount of variety/challenge and autonomy in the work. Table 10 also illustrates that 48 percent of the Coders' job satisfaction, and about 71 percent of their R^2, was explained by the three significant task characteristics.

Letter Carriers

Turning now to the Letter Carriers, Table 10 illustrates that none of the personal characteristics or work experiences variables has a significant impact on their level of job satisfaction. The amount of variety/challenge in a job explained about 20 percent of the Letter Carriers' level of job satisfaction and accounted for almost 44 percent of the change in the R^2 (beta=.4187). Here we seen evidence to suggest that as the amount of variety/challenge increases, so does the level of job satisfaction.

The second strongest influence on the Letter Carriers' job satisfaction score was whether or not they perceived the pay as being good (beta=.2121). If they reported viewing their pay favourably, then the Letter Carriers were more likely to respond positively to the job satisfaction item. This item accounted for 7.79 percent of the change in job satisfaction and 17.1 percent of the change in the group's R^2. The first explanation suggested is that the Letter Carriers have been with the Post Office for an extended period of time therefore they are likely to be payed the maximum wage. This must be rejected though since the equation controls for age and length of time with the organization.

A second more plausible explanation is that the Letter Carriers have financial obligations which make their compensation important to them. This is supported by Table 2 which showed that over 66 percent of the Letter Carriers were married and that they typically had dependents. Both of these measures suggest that the Letter Carriers might have an economic need which increased the importance of their pay.

The more the supervisor was viewed as competent, the higher the Letter Carriers' reported level of job satisfaction. This item accounted for 4.3 percent of the total variance in this group's job satisfaction and about 9.3 percent of the the R^2 (beta=.1189).

Finally, for the Letter Carriers the co-workers summary score was important in determining job satisfaction (beta=.1127) and explained 4 percent of the total variance in job satsifaction, 8.9 percent of the R^2. This may indicate that the Letter Carriers are expressively oriented since the social support received from their co-workers has a significant positive relationship to the level of job satisfaction.

To summarize the findings for the Letter Carriers, four items; variety/challenge, pay, supervision and co-workers, have a significant impact on the reported level of job satisfaction. These four items explained about 45.56 percent of the total change in the Letter Carriers' level of job satisfaction.

Intergroup Comparison

The final step in the regression analysis was to compute a z score and significance level to determine if there were significant differences in the various betas of the two groups. Looking at the personal characteristics effects, none of the differences in the partial effects were statistically significant. Three items were significantly different between the two groups; the number of months on shift, the work intensity score and the overtime hours worked per week. This is what we might expect given that these three factors only influence one of the two groups.

Looking at the months on shift, the difference is due to the size of the difference of the slopes, .0350 compared to .000114. The effects of this item was three times as large for the Coders as for the Letter Carriers, therefore the difference, although small in real terms, was statistically significant.

With regards to work intensity we see an interesting contrast between the two groups. For the Coders, the more intense the work, the more satisfied they are with the job. On the other hand, the Letter Carriers are more satisfied when they did not have to work as hard (note the difference in signs on the two groups' slopes). Although the individual items' relationship to job satisfaction was small in terms of this variable, this may suggest a different orientation to the work. As well, it may be that working hard and fast for the Coders makes the work time go more quickly and that this is related to an increase in the level of job satisfaction.

The difference in overtime is perhaps the most interesting finding of Table 10 since we would expect that the group with the lowest job satisfaction score, the Coders, would want to spend as little time at work as possible. Clearly this is not the case. The more overtime they work, the more satisfied the Coders appear to be. Possibly, as was mentioned earlier, this is because overtime hours are directly related to an increase in pay. This aspect of the Coders' work characteristics needs to be investigated more fully to completely understand the relationship between job satisfaction and overtime. This relationship was not evident for the Letter Carriers.

The two regression equations in Table 10 show that amount of variety and challenge in a job has a pervasive effect on job satisfaction regardless of the group. Within the groups, a variety of different variables influence the job satisfaction score. These finding raise the strong possibility that blue collar workers are not a homogeneous group. This table shows that there are differences between the two groups in the task characteristics which are related to job satisfaction and that future research should investigated job satisfaction of groups based on the type of work they do, rather than by industry. This is shown by the order of importance the variables have in explaining job satisfaction. For the Coders, variety/challenge, supervision, autonomy, overtime hours then months on shift account for the largest percentage of the variance in job satisfaction. For the Letter Carriers, variety/challenge, good pay, supervision, and co-workers impact on job satisfaction. In the next chapter we will link these results back to the literature in an effort to explain these findings.

E. Summary

This section we have shown that there were significant differences between the two groups in terms of their task characteristics and level of job satisfaction. We found that work group and task characteristics had a significant impact on a single measure of job satisfaction and could explain 50 percent of the variance in the dependent measure. Personal characteristics and work experience did not have a perceptible effect on the level of work satisfaction of the entire sample.

The finding that work group was an important factor in determining job satisfaction prompted two further regression equations, one for each work group, to estimate if there were group differences in the variables which influence job satisfaction. Table 10 showed that only one variable, variety and challenge, strongly influenced both groups' job satisfaction score. For the Coders an increase in the months on shift and overtime hours per were linked to an increase in job satisfaction. As well, the Coders reported a decrease in the job satisfaction if they felt their supervisor was not helpful or competent and they had a decreased level of automony on the job. These five items explained about 68 percent of the total variance in the Coders' level of job satisfaction.

Turning to the Letter Carriers, we found that their level of job satisfaction was significantly related to whether or not the pay was good, possibly indicating a greater financial need. Secondly, the support that they received from their supervisor and co-workers was linked to this group's level of job satisfaction. These variables accounted for about 46 percent of the variance in the Letter Carriers' job satisfaction score.

Finally, Table 10 illustrated that there were significant differences between the effects of work characteristics and task characteristics (months on shift, overtime hours per week and the level of work intensity) on the two groups' level of job satisfaction. This was not unexpected given the significant differences between the two groups documented earlier in this section.

V. CONCLUSION

The concept of job satisfaction continues to be of great interest to social scientists concerned with the effects of twentieth century work systems (Kalleberg, 1977:124; Petty et. al., 1983). Both streams of scholarship, be it new labour process or the more managerially orientied human relations approach, discuss the importance of the subjective well-being and the subjective experiences of workers. Included in these concerns are alienation, job satisfaction, how work effects the worker's personal life, and especially of interest to the new labour process theorist, class consciousness (see Braverman, 1974; Edwards, 1979; Thompson, 1983). One way to improve the work experience and quality of working life of the employee is by making the work more satisfying. Central to this approach, and to this study, is the "recognition of the importance of the job in the total life experience of the individual and the desirability of a positive work experience" (Kalleberg, 1977:124).

In an effort to contribute to our understanding of the relationship between personal characteristics, work experiences, task characteristics and job satisfaction, this study has empirically addressed two central issues which were identified in a review of the relevant job satisfaction literature. These issues can now be summarized as follows: 1) Can we empirically define those task characteristics which are related to job satisfaction? 2) Are there differences in the way that a given set of task characteristics influenced separate group of workers' level of job satisfaction?

These issues are germane given the desire of social researchers, particularly labour process theorists, to improve the quality of working life of blue collar workers in general, and more specifically machine-paced workers. Machine-paced workers are of special interest because they typically have the lowest level of control over the production system, therefore they display the most dramatic effects of routinized work. Even though this study looked at two groups of blue collar workers, the issues addressed are much larger and concern the quality of working life for all workers, but especially those in routinized jobs.

In order to address these three questions, data from a 1983 study of Edmonton postal workers were analyzed, looking specifically at two groups, the Coders and the Letter Carriers, which represent polar opposites on a continuum of task routinization. The data were the analyzed to determine the differences and similarities in two separate groups: the Coders, who are machine-paced workers in a factory-like setting in the main post office; and the Letter Carriers, who were rather autonomous in terms of their job characteristics.

We have gone a step beyond previous research, having now compared two groups of blue collar workers who work in the same organization but have very different task characteristics. This approach addresses a major critique of previous labour process research, raised by Thompson (1983:97), in that it has looked at blue collar workers as a differentiated group. We raised the possibility that blue collar workers are not homogeneous in terms of their relation to the prevailing production system. As a result, task characteristics have different effects on each work group's level of job satisfaction.

In this chapter we will highlight the key findings of our research and then discuss the major results in relation to the findings of other reseachers. Finally, we will suggest some directions for further research in the area of job satisfaction.

A. Personal Characteristics and Job Satisfaction

A minor issue arising from the literature review concerned the impact of personal characteristics such as age, sex, marital status and number of dependents, on a group's level of satisfaction. We did not expect to find that these characteristics had an major effects on job satisfaction given that other researchers have had to use large samples to find relatively small effects but this did provide a useful starting point for our analysis. Several social scientists have found that, for a variety of reason, these characteristics were related to the job satisfaction (Burstein et. al., 1975; Caplan et. al., 1975; Rinehart, 1978; Miller, 1980; Murray and Atkinson, 1981; Zeitz, 1983; Northcott and Lowe, 1984).

We documented that the Coders were significantly different from the Letter Carriers in terms of age, sex, marital status, education and number of dependent children. The typical Coder was a younger female who was single, and better educated than the average Letter Carrier. The average Letter Carrier was a significantly older married male with more dependent children. These differences were significant at $p \geq .01$ or less.

Clearly, from the results of Tables 9 and 10, personal characteristics did not have a significant impact on the groups' level of job satisfaction. These findings suggest that work-related characteristics, rather than personal attributes, are more important in explaining variations in job satisfaction and substantiate other research. This was expected given the findings of researchers such as Northcott and Lowe (1985:15-17), who found that gender had only a weak, but significant impact on three dependent measures but that task characteristics overshadowed these effects.

It would appear that personal characteristics may have an effect on job satisfaction only if other measures are not included in the equation. Our findings do not completely dismiss the importance of personal characteristics in that they may indeed be variations among how certain groups of workers respond to task characteristics. But under the conditions inherient in highly routinized work the effects of task characteristics were more important in explain job satisfaction. Personal characteristics may predispose certain individuals towards being more satisfied in their jobs but we found that under certain job conditions the effects of person characteristics were minimized. It is possible that other significant personal characteristics were excluded from our analysis. If we expanded our definition to include the worker's skills, abilities, work history and job aspiration, etc., as we discuss below, we may find that personal characteristics are important in explaining job satisfaction.

B. Task Chararacteristics and Job Satisfaction

The second major issue in our research is which task characteristics affect the job satisfaction of both groups of respondents. Table 9 indicated that job satisfaction was influenced by four job characteristics. The single strongest effect was the amount of variety and challenge in a job, which was highly related to job satisfaction. To reiterate, this scale is composed of six items, "the work is interesting, the jobs lets me use my skill and abilities, the job I do is meaningful to me, the job requires that I be creative, my job requires that I learn new things and the chances for promotions are good". A central purpose of this research was to develop a more empirical definition of the components of routinized work. Clearly, therefore, interesting tasks are a key component of non-routinized work.

The Canadian Work Values Study also found that the major task characteristic related to job satisfaction was whether or not the work was interesting (Burstein et. al., 1975:29-30). "Having interesting work was of much greater concern than having chances to make friends, or a good salary or even job security" (Burstein et. al., 1975:29). These researchers asked respondents to choose between interesting work and higher pay with the result that "fully two-thirds of all respondents opted for interesting or challenging work" (Burstein et. al., 1975:29). This question illustrates how important interesting work is to the average Canadian worker. Our results indicate that these postal workers are no different in that interesting work is very important to them. This task characteristics also taps the workers' chances of using their special skills and abilities and workers' chances to be creative on the job. These are all factors which are considered elements of the non-routinized job (Baron and Bielby, 1982:1259).

Here we see at least partial empirical support for the argument that routinized work is less satisfying than non-routinized work and that job satisfaction is directly affected by the design of the labour process. The amount of variety/challenge, autonomy, closeness of supervision and pay were related to job satisfaction. With a routinized job, we expected that the amount of autonomy and variety/challenge would be low, the workers would express dissatisfaction with their supervision while being concerned about the pay. Work intensity was the one task characteristic which did not appear to be significantly related to job satisfaction but it was moderately negatively correlated with the worker's perception of their level of autonomy (r=-.2379, p=.000). This suggests that as autonomy increases, work intensity declines slightly.

Locke (1976) suggested that variety and challenge in a job are important because these task characteristics provide an individual with a sense of accomplishment when a challenge is successfully met. As well, for a challenge to exist at all there must be an element of uncertainty but for a production process to be efficient, there must be little uncertainty. The need for certainty conflicts with many workers' desire to grow and realize their potential (Locke, 1976:1321). This conflict may be seen as a shift of control over the labor process from the workers, where the workers were making decisions and dealing with the element of uncertainty to the managers, who work to minimize the element of uncertainty.

The Coders, who are machine-tenders, have most of the challenge removed from the job and as a result are less satisfied with their jobs. Correspondingly, the Letter Carriers have more challenge to their work, and more interesting work, because they have more control over their production and a greater variety in the jobs they perform.

This is a step towards operationally defining routinization since previous research has often defined routinization as a product of other characteristics or used only a single measure (Kohn, 1982:1261). Routinization, while an aspect of control, is a composite of several elements of the labour process, such as the amount of autonomy and the amount of variety and challenge in a job.

The job satisfaction literature has indicated that the level of autonomy in a job is related to the level of task routinization. In this study we found that autonomy was weakly related to job satisfaction, although the relationship was significant. The weakness of this relationship is suprising given our working hypothesis that routinized workers, who have less job autonomy and are closely supervised, because of the nature of the production process, would be less satisfied with the job. Although this relationship is present, it was a weak one and explained about 6 percent of the variance in job satisfaction.

Interestingly, work intensity was not significantly related to job satisfaction. It might be because the intensity of the work is a given which the machine-paced worker cannot change, so they have adapted to the work pace.

The good pay also appear to be important to both of the groups of Postal workers (Table 9). Burstein et. al. (1975:30) found that financial rewards were "not valued as highly as the nature of the work or its organization" and our results partly support this finding in that the workers' perceptions of their pay do seem to be moderately related to job satisfaction but the amount of variety/challenge is more important. Possibly the Letter Carriers have a greater financial need since they reported that pay was significantly related to their level of job satisfaction. These people were also more likely to be married with dependent children, suggesting a greater financial need. This raises the issue, which has been so long debated by industrial sociology, of the importance of financial or extrinsic rewards compared to intrinsic rewards. To fully explore this issue we would require information on workers' job-related needs and aspirations. Given how both groups of workers described their task characteristics, it appears that other task characteristics are more important than the pay. This may be due to the fact that postal workers are well paid and earned more than the average blue collar Albertan worker. In 1982 they grossed 24,721.79 dollars compared to the provincial average of 14,231 dollars (Alberta Bureau of Statistics, 1985) . It is possible therefore that pay is less of an issue to the postal workers. Possibly if postal workers earned less than the average worker our finding might have been different.

Table 9 indicates that the more favourably the supervision is valued, the more likely the respondent is to be satisfied with the job. This may be related to the closeness of supervision.

To summarize this issue, only four task characteristics were strongly related to job satisfaction. The amount of variety and challenge in a job is strongly related, indicating that routinized work is less satisfying than non-routinized work because the labour process is less interesting and lacks variety. Although autonomy as a general concept has been widely used by many social scientists, it appears that varied and challenging work are more important in affecting job satisfaction. From Table 9 we also see that the work group was a significant explanitory variable. This perhaps suggests that work group may be a proxy for other characteristics, such as experiences outside of work, or union, which were not measured in this study.

In general it would appear that the intrinsic aspects of the work, such as its variety/challenge, are more important than the job's extrinsic rewards, such as pay, in determining a person's level of job satisfaction. At issue is still whether these results are consistent for both work groups. It is to this concern that we now turn our attention.

C. Intergroup Differences

The third issue to be address in this study, one raised by Thompson (see Thompson 1983:Chapter 4), is the question of whether all blue collar workers are reacting to the same general task characteristics. Variety and challenge are generally of importance in explaining job satisfaction, there may be other task characteristics, depending on the work group, which are important as well. Table 10 supported this argument, the level of variety and challenge in a job was the only task characteristic which strongly influenced both group's level of job satisfaction and the two groups differed in how their other task characteristics related to job satisfaction. To briefly reiterate the findings of the last chapter, for the Coders, variety and challenge, months on shift, supervision, overtime hours per week and automomy were significant in explaining over 68 percent of the variation in their level of job satisfaction. While for the Letter Carriers, of the 45 percent of the variance in the level of job satisfaction we could explain, variety and challenge, financial reward, supervision and co-workers were most important. However, for the Letter Carriers the majority of the variation in job satisfaction is still unexplained. Clearly, different task characteristics are important in explaining each group's level of satisfaction.

For the Coders we see that the level of variety/challenge and the level of autonomy were the most significant task characteristics. This supports the routinization argument which states that these workers do not have enough variety or autonomy and that these characteristics detract from overall job satisfaction. The Letter Carriers, because they have greater automomy in their jobs, did not report this task characteristics as being significantly related to job satisfaction. The Letter Carriers' job satisfaction score is significantly related to their perceptions of their pay, indicating that they are more concerned with the extrinsic rewards of the job. Other evidence only partially supports this because the Coders indicate that the number of overtime hours per week are strongly, positively related to job satisfaction. This shows that they too are interested in the financial characteristics of the job since an increase in overtime is directly related to a larger pay cheque.

The quality of supervision is weakly related to Letter Carriers' job satisfaction score, although they are away from the direct observation of their managers for a good part of each work day. Supervision is more strongly related to the Coders' job satisfaction score, possibly due to the fact they are directly supervised during the work day.

In summary, we have found support for the argument that the task characteristics which are related to job satisfaction differed between two distinct blue collar work groups. The relationship between task characteristics and job satisfaction was found to be effected by the amount of variety/challenge in a job. We have now found empirical support for the linkage of routinization and job satisfaction in that the routinized workers reported that variety and challenge and autonomy were strongly related to job satisfaction. The non-routinized workers reported that variety and challenge and supervision were moderately related to their level of job satisfaction. Other task characteristics were also significantly related to job satisfaction but these were dependent on the group and therefore the level of routinization. This suggests that there are intergroup differences in their task characteristics and orientation to the job.

A tangent to our research is the current debate regarding the relative importance of intrinsic compared to extrinsic rewards, as was mentioned above. Kalleberg stated that his "results suggest that factors associated with the intrinsic dimension have the greatest relative effects for producing overall job satisfaction" (Kalleberg, 1977:136). We found partial support for this in that variety and challenge was the most important task characteristics in explaining job satisfaction. It must be remembered that there was little variation in the two groups income so that pay was really a constant rather than a variable. Clearly this issue needs further research to clarify this relationship while remembering that blue collar workers are not homogeneous in terms of skills, abilities and relationship to the labour process. Our contribution has been to provide empirically-based definitions of the task characterstics which are related to routinized work.

D. Suggestions For Further Research

Almost any research, especially in the social sciences, seems to raise more questions than it answers. This research was intiated from a footnote in a Kalleberg (1977:135) article which suggested that the relative effects of the components of job sastisfaction may need to be modified for particular sub-groups within the population. We found that the some of the task characteristics related to job satisfaction seemed to be related to specific groups but our research has uncovered other questions which we do not have data or resources to address. This section will raise some of these related job satisfaction issues which may be of interest to other researchers.

It would be useful to replicate this study using global facet-specific job satisfaction measures as the dependent variable. This would determine if there were any significant differences in the findings because of a change in the job satisfaction measure. This would determine if other job satisfaction measures are actually tapping different facets of work satisfaction, such as behaviour or attitudinal job satisfaction.

A second question and limitation revolves around what is known about the background of the workers and the relationship between overall life satisfaction and job satisfaction. Meissner (1971) has shown job experiences are related to life satisfaction but there is still some question as to how life satisfaction is related to job satisfaction. On the over hand, White, following Dubin (1956), found that job satisfaction was relatively unrelated to overall life satisfaction (White, 1981:181,189). Possibly individuals who are dissatisfied with their lives are less likely to be satisfied with their job, irregardless of the task characteristics of the work.

Another question which needs to be addressed is are there differences between the job satisfaction experienced by blue collar workers and white collar workers. More wide ranging research is needed to compare the task characteristics of very different occupational groups. Possibly, different task characteristics effect the job satisfaction of people like clerks, who are relatively routinized in their work, but still have a certain amount of discretionary power. On the other hand, one would expect that supervisors have very different task characteristics influencing their level of job satisfaction. As yet there has been little of this type of intergroup comparison.

Returning to the Postal workers, three main issues for further study might include: are the postal workers self-selecting into jobs which fulfill their needs?; How does this study related to what might be occurring in other postal plants?; and How do other types of routinized jobs compare to the postal jobs? The first questions could be addressed by a study of those people who were Coders or Letter Carriers but left the job for one reason or another so that the people who remained were a self-selected population. Were these people so dissatisfied at they left job? If so, what were the task characteristics and organizational antecedents which prompted this type of drastic withdrawal from the work setting. Secondly, are all Canadian postal plants similar to the Edmonton plant? Information from the union offícals suggest that, given that the work in the Post Office is structure the same across Canada, that these results may be generalizable to other postal employees working in other Canadian centres. Finally, in order to increase our understanding of the determinants of job satisfaction, postal workers should be compared to other Canadian workers to determine if the findings of this study reflect more general trends in the workplace.

A second study, which follows-up those people surveyed in this work would be of great interest. A longitudinal survey would address a large gap in the literature since almost all study have been a "single shot", cross-sectional measurement of job satisfaction. It is possible that job satisfaction is not only task dependent but temporally dependent as well. As yet there have been few efforts to answer these types of questions. Finally, it would be interesting to gather information on the past work experiences of the people surveyed. Are there past work experiences which would predispose a worker to being more satisfied or dissatisfied with their present job? The worker's last job may have been less satisfying than their current job therefore they are more satisfied with the present job.

On a larger scale, more work needs to be done in the area of intervening variables between job satisfaction and task characteristics. Other researchers have suggested that work stress may have a significant impact on job satisfaction (Meister, 1981; McLean, 1974; Cooper and

Marshall, 1976; Abdelhalim, 1978) but it is still unclear exactly how this relationship is mediated by the labour process. This is a very large gap in the literature which needs to be studied to understand the determinants of job satisfaction more fully.

Finally, there have been recent trends towards meta-analysis of job satisfaction. Petty et. al. (1984) and Loher et. al. (1985) are pathfinders in a technique which may be very useful in understanding the results of over 3000 job satisfaction articles (Locke, 1976), which have used a variety of different measures while studying widely divergent groups during different time periods. Using this technique, correlational studies can be analyzed to attempt to find constants in the area of job satisfaction. This is one of the most promising developments in job satisfaction research but is only just beginning to be developed. Future students of job satisfaction may wish to conduct fewer surveys but instead analyze the data of others to determine important relationships across a wide variety of groups.

As long as work is valued in our society, job satisfaction will be an important concern for social researchers, workers and managers alike. If the causes and effects of work satisfaction can be studied and documented, then social scientists will hopefully contribute to enhancing the quality of working life of all workers.

VI. BIBLIOGRAPHY

Abdelhalim, A.A.
1981 "Effects of Role Stress, Job Design, Technology Interaction on Employee Work Satisfaction", Academy of Management Journal, 24(2):260-273.
1978 "Employer Affective Responses To Organizational Stress; Moderating Effect of Job Characteristics", Personal Psychology, 31(3):561-579.

Alberta Bureau of Statistics
1985 Alberta Statistical Review, First Quarter, 1985, Edmonton, Alberta Bureau of Statistics.

Amacom
1973 "Job Redesign On the Assembly Line; Farewell to Blue Collar Blues?", Organizational Dynamics, 2(2):57-73.

Baron, J.N. and Bielby, W.T.
1982 "Workers and Machines: Dimensions and Determinants of Technical Relations In the Workplace", American Sociological Review, 47:175-188.

Blauner, R.
1970 Alienation and Freedom; The Factory Worker and His Industry, 5th ed. Chicago, University of Chicago Press.

Braverman, H.
1974 Labour and Monopoly Capital, New York, Monthly Review Press.

Burstein, M., Tiehnaara, N., Hewson, P. and Warrander, B.
1975 Canadian Work Values: Findings of a Work Ethic Survey and a Job Satisfaction Survey, Information Canada.

Canadian Labour Congress
1982 Towards a More Humanized Technology: Exploring the Impact of Video Display Terminals on the Health and Working Conditions of Canadian Office

Workers.

Caplan, R.D., Cobb, S., French, J.R.P., Van Harrison, R. and Pinneau, Jr., S.R.
1975 Job Demands and Worker Health: Main Effects and Occupational Differences, U.S. Department of Health, Education and Welfare, National Institute for Occupational Safety and Health, Cincinnati.

Coburn, D.
1981 "Work Alienation and Well-Being", In Coburn, D., D'Arcy, C., New, P., and Torrance, G. Health and Canadian Society, Fitzhenry and Whiteside.

Cooper, C.L. and Marshall, J.
1976 "Occupation Sources of Stress Review of Literature Relating to Coronary Heart Disease and Mental Ill Health", Journal of Occupational Psychology, 49(1):11-28.

Cummings, T.G. And Molloy, E.S.
1977 Improving Productivity And The Quality Of Working Life, New York, Praeger Publishers.

Dubin, R.
1956 "Industrial Workers' Worlds: A Study of the 'Central Life Interests' of Industrial Workers", Social Problems, 3:65-78.

Edwards, R.
1979 Contested Terrain: The Transformation of The Workplace in the Twentieth Century, Basic Books Ltd.

Elifson, K.W., Runyon, R.P. and Haber, A.
1982 Fundamentals of Social Statistics, London, Addison-Wesley Publishing Company.

Emery, F.B. and Trist, E.
1978 "Analytical Model for Sociotechnical Systems" in William Pasmore and J. Sherwood (ed.), Sociotechnical Systems; A Sourcebook, University Associates, California.

Finn, P.

1981 "The Effects Of Shifts Work On The Lives Of Employees", Monthly Labor Review, 104(10):31-35.

Gardell, B.
1980a "Production Technques and Working Conditions", Current Sweden, No. 256, August.
1980b "Stress Research and Its Implications: Sweden", Proceedings of the 33rd Annual Meeting of the Industrial Relations Research Association, Sept. 5-7, pp.268-75.

Glenn N.D. and Weaver, C.N.
1982 "Further Evidence On Education and Job Satisfaction", Social Forces, 61:46-55

Goldthorpe, J.H.
1968 The Affluent Worker, Industrial Attitudes and Behaviour, Cambridge, Cambridge University Press.

Goranzon, B.
1982 Job Design and Automation In Sweden: Skills and Computerization, Stockholm Sweden, Centre for Working Life.

Gouldner, A.W.
1954 Patterns of Industrial Bureaucracy, Toronto, Ontario, The Free Press.

Gruenberg, B.
1980 "The Happy Worker: An Analysis of Educational and Occupational Differences in Determinants of Job Satisfaction", American Journal Of Sociology, 86(2):247-271.

Herberlein, T.A. and Baumgartner, R.
1978 "Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature", American Sociological Review, 43(4):447-462.

House, J.S., McMichael, A.J., Wells, J.A., Kaplan, B.H. and Landerman, L.R.
1979 "Occupational Stress and Health Among Factory Workers", Journal of Health and Social Behavior 20(2):139-160.

Jurik, N.C. and Halemba, G.J.
1984 "Gender, Working Conditions and the Job Satisfaction of Women in a Non-Traditional Occupation: Female Correctional Officers In Men's Prisons", The Sociological Quarterly, 25:551-566.

Kalleberg, A.L.
1977 "Work Values and Job Rewards: A Theory of Job Satisfaction", American Sociological Review, 42:124-143.

Kohn, M.L.
1976 "Occupational Structure and Alienation", American Journal Of Sociology, 82:111-130.

Kohn, M.L. and Schooler, C.
1982 "Job Conditions and Personality: A Longitudinal Assessment of Their Reciprocal Effects", American Journal Of Sociology, 87(6):1257-1286.

Kolodny, H.F., Johnston, C.P. and Jeffery, W.
1982 "Quality of Working Life: Job Design and Sociotechnical Systems", Labour Canada, Quality of Working Life Unit, Cat. Number L82-34/1980E.

Kornhauser, A.
1965 Mental Health of the Industrial Worker: A Detroit Study, New York, John Wiley and Sons Inc..

Krahn, H.
1983 Labour Market Segmentation in Fort McMurray, Unpublished Ph.D Dissertation.

Lemkau, J.P. and Pottick, K.L.
1985 "The Declining Job Satisfaction of White-Collar Women in Sex-Segregated and Mixed-Sex Occupations", Journal of Vactional Behaviour, In press.

Levi, L., Frankenhaeuser, M. and Gardell, B.
1981 Work Stress Related To Social Structures And Processes, Working Paper, Stockholm, Sweden, Swedish Center for Working Life.

Locke, E.A.

1976 "The Nature and Causes of Job Satisfaction", in M. Dunnette (ed.), Handbook of Industrial and Organizational Psychology. Chicago, Rand-McNally Press, pp.1297-1349.

Loher, B.T., Noe, R.A., Moeller, N.L. and Fitzgerald, M.P.
1985 "A Meta-Analysis of the Relation of Job Characteristics to Job Satisfaction", Journal of Applied Psychology, 70(2):280-289.

Lowe, G.S.,
1981 "Sources of Work Satisfaction/Dissatisfaction: An Overview Of the Research", Unpublished Monograph, presented at the Institute of Public Administration Of Canada Annual Seminar, "Employee Work Attitudes in the Public Service.", Edmonton, Alberta, May 12.

Lowe, G.S. and Krahn, H.J.
1984 Working Canadians: Readings in the Sociology of Work and Industry, Ontario, Methuen Publications Ltd..

Lowe, G.S., Northcott, H.C. and Trytten, T.G.
1984 Working Conditions and Job Stress Among Edmonton Post Office Workers, Canadian Labour Congress Workplace Health and Safety, Canadian Labour Congress, Ottawa.

MacFarlane, D.
1982 "Moving the Mail", Saturday Night, July, pp.22-30.

Mackenzie, G.
1974 "The 'Affluent Worker' Study: An Evaluation and Critique", in Frank Parkin (ed.), London, The Social Analysis of Class Structure, Travistock Prss, 237-256.

Margolis, B.L., Kroes, W.H. and Quinn, R.P.
1974 "Job Stress: An Unlisted Occupational Hazard", Journal of Occupational Medicine, 16:654-661.

Meissner, M.
1971 "The Long Arm of the Job: A Study of Work and Leisure", Industrial Relations, 10:239-260.

McLean, A.A.

1976 "Job Stress and Psychosocial Pressures of Change", Personnel, 53(1):40-49.

1979 Work Stress, Reading, Mass., Addison-Wesley.

McLean, A.A. (ed.)

1974 Occupational Stress, Springfield, Illinois, Thomas.

Miller, J.

1980 "Individual and Occupational Determinants of Job Satisfaction: A Focus on Gender Differences", Sociology of Work and Occupations, 7(3):337-366.

Miller, J., Schooler, C., Kohn, M.L. and Miller, K.A.

1979 "Women And Work: The Psychological Effects Of Occupational Conditions", American Journal Of Sociology, 85(1):66-94.

Mills, T.

1981 "What is Quality of Working Life", Labour Canada Special Publication.

Murray, M.A. and Atkinson, T.

1981 "Gender Differences in Correlates of Job Satisfaction", Canadian Journal of Behavioural Science, 13(1):45-52.

Nie, N.H. (ed.)

1983 SPSSx User's Guide, Toronto, McGraw-Hill Book Company.

Nightingale, D.V.

1982 Workplace Democracy: An Inquiry Into Employee Participation In Canadian Work Organizations, Toronto, University Of Toronton Press.

Nilsson, C.

1978 The Medical, Psychological And Social Consequences Of The Scheduling Of Work Hours, Swedish Trade Union Confederation, I.C.E.F. Conference on Psychosocial Aspects Of Work Environment, Geneva.

Northcott, H.C. and Lowe, G.S.

1984 "Job and Gender Influences in the Subjective Experience of Work", unpublished monograph.

Ondrack, D.A. and Evans, M.G.
1981 "Quality of Working Life: Evaluation and Measurement", Labour Canada,

Parrot, J.C.
1984 "Why We Continue to Struggle", in Lowe and Krahn, eds. Working Canadians, Ontario, Methuen Publications Ltd., 269-275.

Perrow, C.
1970 Organizational Analysis: A Sociological View, California, Cole Books Publishing Company.
1972 Complex Organizations: A Critical Essay, Illinois, Scott Foresman and Company.

Petty, M.M., McGee, G.W. and Cavender, J.W.
1984 "A Meta-Analysis of the Relationships Between Individual Job Satisfaction and Individual Performance", Academy of Management Review, 9(4):712-721.

Porter, L.M. and Steers, R.M.
1973 "Organizational, Work And Personal Factors In Employee Turnover and Absenteeism", Psychological Bulletin, 80:1111.

Quinn, R.P and Staines, G.L.
1979 The 1977 Quality of Employment Survey, Survey Research Center, Institute for Social Research, University of Michigan.

Rinehart, J.W.
1978 "Contradictions of Work-Related Attitudes and Behaviour: An Interpretation", Canadian Review of Sociology and Anthropology, 11:197-213.

Roethlisberger, F.J. and Dickson, W.J.
1961 Management and the Worker, Cambridge, Mass., Harvard University Press.

Smith, M.J.
1981 "Occupational Stress: An Overview of Psychosocial

Factors", In G. Salvendy and M. Smith (ed.), Machine Pacing and Occupational Stress, London, Taylor and Francis Ltd., pp.13-19.

Smith, M.J., Cohen, B.G.F. and Stammerjohn, L.W.
1981 "An Investigation of Health Complaints and Job Stress in Video Display Operators", Human Factors, 23.

Statistics Canada
1982 Corporations and Labour Unions Return Act, Report For 1980, Part II Labour Unions, cat. number 71-202.

Syrotuik, J.M and D'Arcy, C.
1982 "Occupational Stress, Locus of Control and Health Among Men In A Prairie Province", Canadian Journal of Behavioural Science, 14:122-133.

Tausky, C.
1979 Work Organizations: Major Theoretical Perspectives, 2nd ed., Itasca, Illinois, F.E. Peacock Publishers, Inc..

Taylor, F.W.
1911 "Scientific Management", in Oscar Grusky and George A. Miller (ed.), The Sociology of Organizations, 2nd ed., New York, The Free Press.

Thompson, P.
1983 The Nature of Work, London, The MacMillan Press Ltd.

Tilley, A., Wilkinson, R.T., Warren, P.S.G., Watson, B., and Drud, M.
1982 "The Sleep and Performance of Shift Workers", Human Factors, 24(6):629-641.

Trist, E.
1978 "Adapting to A Changing World", Labour Gazette, Special Edition, 10-20.
1981 "The Evolution Of Socio-technical Systems: A Conceptual Framework And An Action Research Program", Issues In The Quality of Working Life, Occasional paper, No.2(June,1981), Ontario Quality Of Working Life Center.

Tucker, B. and Taylor, J.C.
1981 *Improving Supervisory Quality Of Work Life Through Socio-Technical Design: A Case Involving Multicraft Supervision In A Major Canadian Oil Refinery*, Unpublished Report.

Vroom, V.H.
1964 *Work and Motivation*, New York, John Wiley and Sons.

Westley, W. A.
1981 *Quality of Working Life, The Role of the Supervisor*, Labour Canada, Cat. No. L 82-39/1981E.

White, T.H.
1981 "The Relative Importance of Work as a Factor in Life Satisfaction" *Industrial Relations*, 36 (1):179-191.

Woodward, J.
1958 *Management And Technology*, London, Her Majesties Stationary Office.

Wright, J.D. and Hamilton, R.F.
1978 "Work Satisfaction and Age: Some Evidence for the 'Job Change' Hypothesis", *Social Forces*, 56:1140-58.

York Study
1981 *Project 310, Social Change in Canada, Phase 3*, Survey Research Centre, Institute for Behavioural Research, York University, April.

Zeitz, G.
1983 "Structural and Individual Determinants of Organization Morale and Satisfaction", *Social Forces*, 61:1088-1108.

VII. APPENDIX 1. COVER LETTERS

A. Introductory Letter Sent By Letter Carriers Union of Canada

21 March, 1983

Dear LCUC Member;

Enclosed is a survey on stress.

There are many small factors which lead up to health and safety hazards, and it is often not easy for our Health and Safety Committee to pinpoint these. Many people have long suspected that the Post Office is a stressful place to work. The information in this questionnaire will assist our union in combating stress in the workplace. We are pleased to have Professors Lowe and Nothcott conducting this survey.

Be assured that confidentiality will be respected; neither management nor the union will see any of the actual surveys.

I encourage you to answer and return the questionnaire as soon as possible. Your answers and ideas are important!

Please do not hesitate to call me if you have any questions.

In solidarity,

Laura Lee,
Secretary Treasurer,
Local 15,
Letter Carriers' Union of Canada

B. Introductory Letter Sent By Canadian Union Of Postal Workers

Dear CUPW Member;

March 21, 1983

Enclosed is a survey on stress.

There are many small factors which lead up to health and safety hazards, and it is often not easy for our Health and Safety Committee to pinpoint these. Many people have long suspected that the Post Office is a stressful place to work. The information in this questionnaire will assist our union in combating stress in the workplace. We are pleased to have Professors Lowe and Nothcott conducting this survey.

Be assured that confidentiality will be respected; neither management nor the union will see any of the actual surveys.

I encourage you to answer and return the questionnaire as soon as possible. Your answers and ideas are important!

Please do not hesitate to call me if you have any questions.

In solidarity,

Karen Lockhart,
Secretary Treasurer,
Edmonton and Area Local,
Canadian Union of Postal Workers

C. Introductory Letter From Research Team

March 1983

Dear Post Office Worker:

Job Stress is a growing concern among workers and their unions today. In one week you and your co-workers at the Edmonton Post Office will receive a questionnarie that investigates this important topic.

This study is being conducted by researchers at the University of Alberta and has the endorsement of the Letter Carrier's Union and Canadian Union of Postal Workers.

Your participation will be greatly appreciated. The information collected by a study of this nature can lead to improved working conditions. The study's success depends on the cooperation of all post office workers. We are counting on you to answer the questionnaire when it arrives next week. Your response will be completely anonymous and confidential.

Thank you in advance.

Yours sincerely,

Graham S. Lowe, Ph.D.
Assistant Professor

Herbert C. Northcott, Ph.D.
Associate Professor

GSL/vec

D. Letter Attached to Questionnaire From Research Team

March 21, 1983

Dear Post Office Worker:

We are researchers at the University of Alberta who have been invited by your union to conduct a study of job stress among Edmonton post office workers. The purpose of this study is to examine various working conditions and their effects on worker health.

All completed questionnaires will be treated with the utmost confidentiality. To ensure that you remain totally anonymous, please do not identify yourself in any way on the questionnaire. Place the completed questionnaire in the stamped envelope provided and mail it back to us.

Along with the questionnaire you will also find a post card. Please print your name on it and mail it back to us *separately* from your questionnaire. The post card allows us to cross your name off the mailing list without our being able to tell which questionnaire is yours.

We operate as independent researchers. *No personal information will be released to management or anyone else.* Questionnaires forms will be destroyed as soon as we have analyzed the results. The costs of the study have been partly met by "no-strings-attached" research grants from Labour Canada and from the University of Alberta.

A report of our findings will be provided to your union and to the public. A summary will be made available to all workers who participate in the study. *This report will be of a general nature, it will be impossible to identify individual workers.*

The success of this project depends on your cooperation. We would greatly appreciate your taking time to answer the questionnaire.

Sincerely,

Graham S. Lowe, Ph.D.
Assistant Professor

Herbert C. Northcott, Ph.D.
Associate Professor

E. First Follow-Up Letter From Research Team

April 1983

Dear Post Office Worker:

A week ago we sent you a questionnaire on job stress and working conditions in the Edmonton Post Office.

The success of this research depends on your participation. We encourage you to take the time to fill out the questionnaire and return it to us.

If you have already replied, please disregard this letter.

Thank you for your assistance.

Yours sincerely,

Graham S. Lowe, Ph.D.
Assistant Professor

Herbert C. Northcott, Ph.D.
Associate Professor

F. Second Follow-Up Letter From Research Team

April 1983

Dear Post Office Worker:

Our mailing list shows that we have not as yet received a post card from you indicating that you filled out the working conditions questionnaire sent to your several weeks ago.

In case that your questionnaire has gone astray, we are enclosing a second copy for you to fill out. If you have already returned a questionnaire please discard this mailing.

The success of this project depends on your participation. We would urge you to take 30 minutes to fill out and return the questionnaire.

Thank you for your assistance.

Yours sincerely,

Graham S. Lowe, Ph.D.
Assistant Professor

Herbert C. Northcott, Ph.D.
Associate Professor

G. Final Follow-Up Letter From Research Team

April 1983

Dear Post Office Worker:

We are writing you once again to encourage you to fill out the job stress questionnaire that we recently sent you. We would appreciate your returning it to us at your earliest possible convenience.

If you have have already done so please disregard this letter.

The success of this project depends on your participation. We copy that you will find the 30 minutes it will take to answer the questionnaire on the important topic of job stress.

Yours sincerely,

Graham S. Lowe, Ph.D.
Assistant Professor

Herbert C. Northcott, Ph.D.
Associate Professor

H. Attached Post Card

Dear Professors Lowe and Northcott:

I have complete the questionnaire and have mailed it back to you. Please take my name off the mailing list.

....
(Please print your full name)

VIII. APPENDIX 2. MEANS AND ZERO-ORDER CORRELATIONS

Appendix 2.1

Mean Scores and Standard Deviations For All Variables by Group

Variable	Coders Mean	 Std Dev	Letter Carriers Mean	 Std Dev
Personal Characteristics				
Age	28.9	7.2	35.3	12.1
Education	12.7	2.3	12.2	2.1
Work Experience				
Length of Time With Post Office	50.8	30.4	125.4	105.1
Months With Edmonton Post Office	45.8	25.2	119.6	104.9
Months At Classification	41.1	29.2	108.3	102.0
Months At Section Or Station	33.6	25.5	71.9	79.6
Preferred Shift	1.3	.7	1.1	.3
Months On Shift	24.1	15.9	113.4	104.8
Overtime Hours Per Week	5.1	5.9	.9	2.6
Task Characteristics				
Supervisor Summary Score	3.5	1.1	4.4	1.1
Variety/Challenge Summary Score	2.4	1.1	3.7	1.4
Work Intensity Summary Score	5.0	1.6	4.9	1.5
Autonomy Summary Score	2.8	1.2	4.5	1.3
Pay is Good	5.9	1.1	5.3	1.5
Co-Workers Summary Score	4.0	1.5	4.1	1.5
Time Pressure-Role Conflict Score	3.8	.9	4.0	1.0
Job Security is Good	4.9	1.7	4.9	1.7
Fringe Benefits are Good	4.1	1.9	5.2	1.4
Global Job Satisfaction	3.7	1.6	5.2	1.5
Number of Respondents	69		274	

Note: All numbers rounded to one decimal place.

Appendix 2.2
All Variables Zero-Order Correlations, Both Groups[1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1		.41	-.05	.37	.24	.24	.35	.43	-.24	.56	-.05	-.07	-.26	-.24	-.13	-.16	-.12	-.31	.05	-.08	.09
2	.24		.25	.19	-.05	-.01	.17	.33	-.11	.59	-.05	-.02	-.07	-.03	.09	-.04	.05	-.16	-.14	-.05	.02
3	-.13	-.07		-.35	-.13	-.19	-.15	-.07	.15	-.01	-.01	.17	.03	-.08	.15	-.03	.06	-.19	-.31	-.08	.01
4	.21	.30	-.24		.19	.21	.13	.14	.04	.25	.10	-.12	.09	.10	.06	.15	.08	.00	.17	.00	-.02
5	.14	.04	-.14	.23		.36	.26	.25	.05	.16	.22	-.24	-.23	-.13	-.21	-.21	-.27	-.22	.13	-.12	-.12
6	.22	.20	-.13	.18	.33		.20	.11	-.03	.10	.06	-.01	-.15	-.04	-.04	-.12	-.09	-.09	.05	.05	-.06
7	.21	.11	-.01	.08	.40	.38		.20	-.10	.39	-.11	.16	-.13	-.18	-.06	-.16	-.06	-.07	.18	.03	.38
8	.45	.23	-.13	.16	.24	.18	.24		.13	.34	-.05	-.39	-.45	-.17	-.11	-.16	.01	-.14	.13	-.14	-.10
9	-.14	.14	.34	-.06	-.18	-.07	.00	-.07		-.11	-.13	-.11	-.07	-.06	-.10	-.05	-.15	.05	-.10	-.03	-.13
10	**.36**	**.48**	**-.22**	**.34**	**.37**	**.30**	**.26**	**.36**	**-.07**		**-.12**	**-.06**	**-.12**	**-.17**	**-.03**	**-.17**	**-.08**	**-.07**	**.08**	**.11**	**.05**
11	-.05	-.18	.09	-.06	.31	-.06	-.03	.00	-.09	.04		-.19	.03	.06	-.06	.08	.05	-.11	-.06	-.12	-.25
12	.17	.34	-.03	-.04	-.32	.21	.09	.01	.14	.03	-.46		.35	.36	.29	.35	.20	.23	-.07	-.05	.46
13	.07	.02	-.02	.09	.01	.12	.06	.02	.05	.01	.08	.19		.25	.09	.24	.05	.10	-.16	-.17	-.03
14	.13	.37	-.05	.04	-.30	.20	.07	.00	.19	.03	-.51	.86	.12		.73	.79	.60	.34	-.05	.02	-.16
15	.17	.38	-.06	.03	-.31	.20	.07	.03	.17	.04	-.51	.85	.11	.98		.59	.68	.28	-.03	-.04	-.06
16	.13	.37	-.01	.05	-.26	.22	.11	.01	.22	.04	-.50	.82	.09	.94	.93		.81	.49	.02	.07	-.13
17	.10	.35	-.03	.07	-.25	.16	-.01	.03	.12	.06	-.40	.65	.11	.73	.75	.71		.46	.05	.05	-.09
18	.10	.34	-.05	.02	-.32	.18	.07	-.01	.18	.02	-.52	.84	.10	.96	.95	.92	.77		.05	.07	.05
19	-.05	-.13	.04	-.13	.06	.02	-.05	-.03	.09	-.09	.03	-.03	.02	-.07	-.07	-.05	-.04	-.07		-.20	.11
20	-.01	-.02	.10	-.12	-.11	-.07	.01	.05	.06	-.12	-.11	.01	-.11	.04	.05	.06	-.04	.05	.05		.03
21	-.09	-.28	.08	-.05	.11	-.19	-.01	.00	-.14	-.12	.21	-.36	-.08	-.42	-.40	-.40	-.32	-.41	.01	.05	

---

[1] Coders' correlations above, Letter Carriers' correlations below the diagional.

Appendix 2.3
Descriptions of Zero-Order Correlation Codes

Corr. Code	Variable Number	Description
1	Var287	Supervision Summary Score
2	Var288	Variety Summary Score
3	Var289	Work Intensity Summary Score
4	Var290	Autonomy Summary Score
5	Var089	Pay is Good
6	Var090	Good Job Security
7	Var091	Good Fringe Benefits
8	Var292	Co-workers Summary Score
9	Var293	Time Pressure-Role Conflict Summary Score
10	Var103	Global Satisfaction Measure
11	Var002	Sex
12	Var001	Age
13	Var003	Marital Status
14	Var010	Months With Post Office
15	Var011	Months With Edmonton Post Office
16	Var013	Months At Classification
17	Var015	Months At Section Or Station
18	Var021	Months On Shift
19	Var022	Preferred Shift
20	Var023	Overtime Hours Per Week
21	Var007	Education

IX. APPENDIX 3. QUESTIONNAIRE CODEBOOK

WORKING CONDITIONS AND JOB STRESS AMONG EDMONTON POST OFFICE WORKERS.

CODE BOOK

Revised February, 1983

ABBREVIATIONS

NR=NO REPLY (8, 88, 888, ...)
NA=NOT APPLICABLE (9, 99, 999, ...)

Card1,Col 1,4 **Questionnaire number** |_|_|_|_|

Col 5 Card Number |1|

VAR001 Card 1,Col 6,7 How old are you?
|__|__| Years
NR 88

VAR002 Card 1,Col 8 What is your sex?
Male 1
Female 2
NR 8

VAR003 Card 1,Col 9 What is your current marital status?
Single (Never Married) 1
Married 2
Common-Law 3
Divorced 4
Separated 5
Widowed 6
NR 8

VAR004 Card 1,Col 10 IF MARRIED OR LIVING COMMON LAW:
Is your spouse presently working full-time, part-time, going to school, keeping house or other? (circle one only)
employed full-time 1
employed part-time 2
unemployed 3
retired 4
in school 5
keeping house 6

other (specify) ______________ 7

NR 8
IF 1 OR 4-6 IN COL 9, NA 9

VAR005 Card 1,Col 11,12 How many school-age children (6 to 17 years of age) do you have living in your household?
|__|__| Number

NR 88

VAR006 Card 1,Col 13,14 How many of your children who are living with you are under the age of 6?
|__|__| Number

NR 88

VAR007 Card 1,Col 15 What is the highest level of education that you have completed?
Elementary 1
Some high school 2
High school graduation 3
Community college/technical
  Training/diploma/etc 4
Some university 5
University graduation 6
Post-graduate or
  Professional degree 7
NR 8

VAR008 Card 1,Col 16,17 How many years of schooling have you had in total?
(If only single digit enter zero before number.)
|__|__| Years
NR 88

VAR009 Card 1,Col 18 Are you presently enrolled in an education course or program leading toward a diploma, certificate or degree?
No..............1
Yes.............2
No Reply........8

LOOKING AT YOUR WORK EXPERIENCE:

VAR010 Card 1,Col 19-22 How long have you worked for the post office in total?
Convert years to months by multiplying by 12.
Add months. Enter total months |_0|__|__|__| Months
NR 0888

VAR011 Card 1,Col 23-26 How long have you worked for the Edmonton post office?
Convert years to months by multiplying by 12.
Add months. Enter total months |_0|__|__|__| Months
NR 0888

VAR012 Card 1,Col 27 What is your present classification? (circle appropriate number)

1. P02	6. SLC
2. P04 full-time	7. MSC
3. P04 part-time	8. MSCR
4. P05	9. MSCH
5. Letter carrier	0. NR

VAR013 Card 1,Col 28-31 How long have you had the above classification?
Convert years to months by multiplying by 12.
Add months. Enter total months |_0|__|__|__| Months
NR 0888

VAR014 Card 1,Col 32-33 If you are a CUPW member, please indicate the section in which you work.
If you are a LCUC member, please indicate the station or depot at which you work.

CUPW	LCUC		
SECTION	STATION	or	DEPOT
01. Coding	11. C		22. 4
02. City Letters	12. D		23. 5
03. Forward Letters	13. E		24. 6
04. Registration	14. F		25. 7
05. City news and parcels	15. L		26. 8
06. Forward news and parcels (culls and prep)	16. M 17. South Edmonton		
07. Transfer	18. Main, letter carriers		
08. Preferred	19. Main, night routers		
09. Wickets - Main	20. Main, mobile sorting		
10. Wickets - Other	21. Main, transportation		

88. NR

VAR015 Card 1,Col 34-37 How long have you worked in the above?

Convert years to months by multiplying by 12.
Add months. Enter total months |_0|__|__|__| Months
NR 0888

VAR016 Card 1,Col 38 Are you a part-time employee?

No..............1
Yes.............2
No Reply........8

VAR017 Card 1,Col 39-40 IF YES, how many hours per week?

|__|__| Hours
NR 88
IF 1 IN COL 38, NA 99

VAR018 Card 1,Col 41 Are you: (circle one)

permanent 1
probationary 2
term (more than 6 months) 3
term (less than 6 months) 4
NR 8

VAR019 Card 1,Col 42 Have you looked for another job with an employer other than the post office in the last year?

No..............1
Yes.............2
No Reply........8

THE FOLLOWING QUESTIONS CONCERN YOUR WORK SCHEDULE:

VAR020 Card 1,Col 43 Which of the following shifts best describes your present work schedule? (circle one)

Day shift.................. 1
Afternoon shift............ 2
Night shift................ 3
Rotating shift............. 4
NR......................... 8

VAR021 Card 1,Col 44-47 How long have you worked on this shift?

Convert years to months by multiplying by 12.
Add months. Enter total months |_0|__|__|__| Months
NR 0888

VAR022 Card 1,Col 48 If you had a choice, which shift would you prefer? (circle one)

Day shift.................... 1
Afternoon shift.............. 2
Night shift.................. 3
Rotating shift............... 4
NR........................... 8

On the average, how many overtime hours per week do you usually work?

VAR023 Card 1,Col 49,50 reported

|__|__| Hours

NR 88

VAR024 Card 1,Col 51,52 unreported

|__|__| Hours

NR 88

VAR025 Card 1,Col 53 Do you have any problems concerning the hours you work?

No..............1
Yes.............2
No Reply........8

VAR026 Card 1,Col 54 What are these problems? (circle appropriate number(s))

First Choice

Bad shifts, start too early or end too late 1
Overtime 2
Excessive hours 3
Unpredictable hours 4
Route evaluation insufficient 5
Other (specify) ______________________________ 6
IF 1 IN COL 53, NA 9
NR 8

VAR027 Card 1,Col 55 Second Choice
(see VAR026)

VAR028 Card 1,Col 56 Third Choice
(see VAR027)

VAR029 Card 1,Col 57 How serious are these problems for you ...

No problem						Very Great Problem	NR	NA (IF 1 IN COL 53)
1	2	3	4	5	6	7	8	9

NOW SOME QUESTIONS ABOUT YOUR WORKING CONDITIONS:

VAR030 Card 1,Col 58-71 to VAR036

In your job, which of the following machines do you work with? (circle appropriate number(s)) (Up to 7 machines are coded)

IF none, code 97 in cols 58-59 and zeros in cols 60-71.
IF four machines are selected, code in cols 58-65 and put zeros in cols 66-71.

97. None
01. GDS
02. LSM
03. FSM
04. OCR
05. Canceller
06. Toshiba takeaway
07. Bag sorter
08. Fork lift
09. Electric pallet jack
10. Tugger

88. NR

11. Hand jack
12. 3/4 ton truck
13. 1 ton truck
14. 3 ton truck
15. Shunter truck
16. Stationwagon
17. Hydraulic lift
18. Scissor lift
19. Pallet stacker
20. Label printer
21. Typewriter

VAR037 Card 1,Col 72 How likely is it that in the next few years your job will be replaced by computers or other machines?

Very Unlikely						Very Likely	NR
1	2	3	4	5	6	7	8

DOES YOUR JOB EVER EXPOSE YOU TO ....

VAR038 Card 1,Col 73 dangerous chemicals

No..............1
Yes.............2
No Reply........8

VAR039 Card 1,Col 74 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR040 Card 1,Col 75 dangers from fire or shock

No..............1
Yes.............2
No Reply........8

VAR041 Card 1,Col 76 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR042 Card 1,Col 77 air pollution from dust, smoke, gas, fumes, fibers (such as asbestos), or other things?

No..............1
Yes.............2
No Reply........8

VAR043 Card 1,Col 78 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR044 Card 1,Col 79 working outside in bad weather?

No..............1
Yes.............2
No Reply........8

VAR045 Card 1,Col 80 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

```
XXXXXXXXXXXXXXXXXXXXXX CARD 2 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Col 1,4 Questionaire number |_|_|_|_|

Col 5  Card Number          |2|


VAR046 Card 2,Col  6     too many things in your work area?
                              No..............1
                              Yes.............2
                              No Reply........8

VAR047 Card 2,Col  7     IF YES, How much of a problem is this for you?
                                No                               Very Great     IF 1    IF 8
                              problem                              Problem        NA      NR
                                 1    2     3     4     5     6     7             9       8

VAR048 Card 2,Col  8     extremes of temperature, humidity or dryness indoors?
                              No..............1
                              Yes.............2
                              No Reply........8

VAR049 Card 2,Col  9     IF YES, How much of a problem is this for you?
                                No                               Very Great     IF 1    IF 8
                              problem                              Problem        NA      NR
                                 1    2     3     4     5     6     7             9       8

VAR050 Card 2,Col 10     dirty or badly maintained areas in your workplace?
                              No..............1
                              Yes.............2
                              No Reply........8

VAR051 Card 2,Col 11     IF YES, How much of a problem is this for you?
                                No                               Very Great     IF 1    IF 8
                              problem                              Problem        NA      NR
                                 1    2     3     4     5     6     7             9       8
```

VAR052 Card 2,Col 12 things that are placed or stored dangerously?

No..............1
Yes.............2
No Reply........8

VAR053 Card 2,Col 13 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR054 Card 2,Col 14 too much noise?

No..............1
Yes.............2
No Reply 8

VAR055 Card 2,Col 15 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR056 Card 2,Col 16 dangerous tools, machinery, or equipment?

No..............1
Yes.............2
No Reply........8

VAR057 Card 2,Col 17 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR058 Card 2,Col 18 too many people in your work area?

No..............1
Yes.............2
No Reply........8

VAR059 Card 2,Col 19 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR060 Card 2,Col 20 risk of catching disease?

No..............1
Yes.............2
No Reply........8

VAR061 Card 2,Col 21 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR062 Card 2,Col 22 risk of traffic accidents while working?

No..............1
Yes.............2
No Reply........8

VAR063 Card 2,Col 23 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR064 Card 2,Col 24 risk of personal attack or verbal abuse by people?

No..............1
Yes.............2
No Reply........8

VAR065 Card 2,Col 25 IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR066 Card 2,Col 26 risk of personal attack by animals?

No..............1
Yes.............2
No Reply........8

VAR067 Card 2,Col 27

IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR068 Card 2,Col 28

dangerous work methods?

No..............1
Yes.............2
No Reply........8

VAR069 Card 2,Col 29

IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR070 Card 2,Col 30

risk of permanent physical disability?

No..............1
Yes.............2
No Reply........8

VAR071 Card 2,Col 31

IF YES, How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR072 Card 2,Col 32

any other dangers?

No..............1
Yes.............2
No Reply........8

VAR073 Card 2,Col 33

How much of a problem is this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

THERE ARE MANY THINGS PEOPLE MIGHT SAY TO DESCRIBE THEIR JOBS. SOME OF THESE ARE LISTED BELOW. WE WOULD LIKE TO KNOW WHETHER OR NOT THESE STATEMENTS DESCRIBE YOUR JOB. PLEASE INDICATE HOW STRONGLY YOU DISAGREE OR AGREE WITH THE FOLLOWING:

VAR074 Card 2,Col 34 My job requires that I keep learning new things.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR075 Card 2,Col 35 My job requires that I work very fast.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR076 Card 2,Col 36 I have the freedom to decide what I do on my job.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR077 Card 2,Col 37 My job requires that I do some things over and over.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR078 Card 2,Col 38 My job requires that I work very hard.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR079 Card 2,Col 39 My job lets me use my skills and abilities.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR080 Card 2,Col 40 I decide when to take breaks.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR081 Card 2,Col 41 My job requires that I be creative.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR082 Card 2,Col 42 I never seem to have enough time to get everything done on my job.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR083 Card 2,Col 43 On my job, I can't satisfy everybody at the same time.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR084 Card 2,Col 44 I determine the speed at which I work.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR085 Card 2,Col 45 The work I do on my job is meaningful to me.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR086 Card 2,Col 46 It is basically my responsibility to decide how my job gets done.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR087 Card 2,Col 47 The chances for promotion are good.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR088 Card 2,Col 48 The work is interesting.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

```
VAR089 Card 2,Col 49     The pay is good.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR090 Card 2,Col 50     The job security is good.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR091 Card 2,Col 51     The fringe benefits are good.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR092 Card 2,Col 52     The physical surroundings are pleasant.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR093 Card 2,Col 53     I am free from the conflicting demands that other people make of me.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR094 Card 2,Col 54     Discipline is handled fairly.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR095 Card 2,Col 55     The people I work with take a personal interest in me.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8

VAR096 Card 2,Col 56     The people I work with are helpful to me in getting my job done.
                              Strongly                       Strongly
                              Disagree                        Agree       NR
                                 1     2     3     4     5     6     7          8
```

VAR097 Card 2,Col 57 My supervisor is successful in getting people to work together.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR098 Card 2,Col 58 My supervisor is very concerned about the welfare of those under him/her.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR099 Card 2,Col 59 My supervisor is friendly.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR100 Card 2,Col 60 My supervisor is competent in doing his/her job.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR101 Card 2,Col 61 My supervisor is helpful to me in getting my job done.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR102 Card 2,Col 62 My supervisor treats some employees better than others.

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

VAR103 Card 2,Col 63 All in all, how satisfied would you say you are with your job?

Very Dissatisfied						Very Satisfied	NR
1	2	3	4	5	6	7	8

VAR104 Card 2,Col 64 If you had the choice to make again, would you choose the same type of work you now do?

No..............1
Yes.............2
No Reply........8

VAR105 Card 2,Col 65 How likely is it that you will make a genuine effort to find a new job with another employer within the next year?

Very Unlikely						Very Likely	NR
1	2	3	4	5	6	7	8

VAR106 Card 2,Col 66 If you had an opportunity to take a similar job at the same pay in another organization would you take it or stay in your current job?

Take it 1
Stay 2
NR 8

VAR107 Card 2,Col 67 I could get a better job if I quit working for the post office?

Strongly Disagree						Strongly Agree	NR
1	2	3	4	5	6	7	8

WE WOULD NOW LIKE TO ASK ABOUT DISCRIMINATION AND SEXUAL HARASSMENT ON THE JOB:
(Males and females should both answer these questions.)

During the past 12 months, while working at the post office have you been discriminated against because of your age, sex, ethnicity/race, or disability?

VAR108 Card 2,Col 68 age

No..............1
Yes.............2
No Reply........8

VAR109 Card 2,Col 69 IF YES, How much of a problem is(was) this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR110 Card 2,Col 70 sex

No..............1
Yes.............2
No Reply........8

VAR111 Card 2,Col 71 IF YES, How much of a problem is(was) this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR112 Card 2,Col 72,73 With which ethnic group do you most identify?

British	01
French	02
Ukrainian	03
Italian	04
German	05
Hungarian	06
Polish	07
Jewish	08
Scandinavian	09
East Indian	10
Netherlands	11
Czech	12
Japanese	13
Chinese	14
Native Indian	15
Inuit	16
Canadian	17
American (North)	18
Russian	19
Other	20
NR	88

VAR113 Card 2,Col 74 At the post office in the past 12 months, have you been discriminated against because of your ethnicity?

No	1
Yes	2
No Reply	8

VAR114 Card 2,Col 75 IF YES, How much of a problem is(was) this for you?

No problem						Very Great Problem	IF 1 NA	IF 8 NR
1	2	3	4	5	6	7	9	8

VAR115 Card 2,Col 76 Do you have a disability of any kind?

No..............1
Yes.............2
NR..............8

VAR116 Card 2,Col 77 IF YES, At the post office in the past 12 months, have you been discriminated against because of your disability?

No..............................1
Yes.............................2
IF 1 IN COL 76, Not Applicable..9
No Reply........................8

VAR117 Card 2,Col 78 IF YES, How much of a problem is(was) this for you?

No problem						Very Great Problem	If 1 in col 76 or 77 NA	NR
1	2	3	4	5	6	7	9	8

VAR118 Card 2,Col 79 Have you experienced sexual harassment in the post office during the past year?

No..............1
Yes.............2
No Reply........8

XXXXXXXXXXXXXXXXXXX CARD 3 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Col 1,4 Questionaire number |_|_|_|_| .

Col 5 Card Number |3|

VAR118B Card 3,Col 6 IF YES, How much of a problem is(was) this for you?

No problem						Very Great Problem	If 1 in col 79 NA	NR
1	2	3	4	5	6	7	9	8

VAR119 Card 3,Col 7 IF YES, briefly describe a recent incident of harassment:

Response ______________________________ 3
NR 8
IF 1 IN COL 79, NA 9

VAR120 Card 3,Col 8 Was the main harasser a:

Male supervisor 1
Male co-worker 2
Male member of the public 3
Female member of the public 4
Female supervisor 5
Female co-worker 6
Other 7
NR 8
IF 1 IN COL 6, NA 9

VAR121 Card 3,Col 9 What action, if any, did you take as a result of this harassment?

No action 1
Requested a move 2
Filed a grievance 3
Complained to management 4
Complained to union 5
Other (Specify) __________________ 6
NR 8
IF 1 IN COL 6, NA 9

Answer only if you are married or living common law, otherwise go to question 38:

VAR122 Card 3,Col 10 How much do your job and your family life interfere with each other?

A Lot						Not at All	NA	NR
1	2	3	4	5	6	7	9	8

WORKING PARENTS: ANSWER ONLY IF YOU HAVE CHILDREN UNDER 18 AT HOME, OTHERWISE GO TO QUESTION 38:

We are interested in how children are looked after when their parents are at work. When you are at your job, do you use any of the following child care arrangements on a regular basis: (circle all appropriate responses)

VAR123 Card 3,Col 11	Day Care	1. No	2. Yes	8. NR	9. NA
VAR124 Card 3,Col 12	After School Program	1. No	2. Yes	8. NR	9. NA
VAR125 Card 3,Col 13	Nursery School	1. No	2. Yes	8. NR	9. NA
VAR126 Card 3,Col 14	Someone Else's Home	1. No	2. Yes	8. NR	9. NA
VAR127 Card 3,Col 15	In Your Own Home by Spouse or	1. No	2. Yes	8. NR	9. NA
VAR128 Card 3,Col 16	Other Relative	1. No	2. Yes	8. NR	9. NA
VAR129 Card 3,Col 17	In Your Own Home by Someone Else	1. No	2. Yes	8. NR	9. NA
VAR130 Card 3,Col 18	Children Take Care of Themselves	1. No	2. Yes	8. NR	9. NA
VAR131 Card 3,Col 19	Other (Specify) ____________	1. No	2. Yes	8. NR	9. NA

VAR132 Card 3,Col 20 Do these arrangements ever conflict with your work schedule?

No............................1
Yes...........................2
IF ALL 9's ABOVE, NA.........9
No Reply.....................8

VAR133 Card 3,Col 21 Is the cost of these arrangements a problem to you?

No..............1
Yes.............2
Not Applicable..9
No Reply........8

VAR134 Card 3,Col 22 Is there any other child care arrangement you would prefer besides the one(s) you are now using?

No..............1
Yes.............2
Not Applicable..9
No Reply........8

VAR135 Card 3,Col 23,24 IF YES, What would you prefer? (circle one only)

Day Care 01
After School Program 02
Nursery School 03
Someone Else's Home 04
In Your Own Home by Spouse or 05
Other Relative 06
In Your Own Home by Someone Else 07
Children Take Care of Themselves 08
Other (Specify) ______________________ 09
IF 1 IN COL 21, NA..................... 99
NR 88

THE FOLLOWING QUESTIONS CONCERN YOUR UNION:

VAR136 Card 3,Col 25 Have you ever held a position in your union?

No..............1
Yes.............2
No Reply........8

VAR137 Card 3,Col 26 IF YES, have you ever been a shop steward?

No..............1
Yes.............2
No Reply........8
NA..............9

VAR138 Card 3,Col 27 Have you filed a grievance through your union during the last year?

No..............1
Yes.............2
No Reply........8

VAR139 Card 3,Col 28 How would you describe union-management relations in the post office?

Very Hostile						Very Friendly	NR
1	2	3	4	5	6	7	8

VAR140 Card 3,Col 29 All in all, how satisfied would you say you are with your union?

Very Dissatisfied						Very Satisfied	NR
1	2	3	4	5	6	7	8

THE FOLLOWING QUESTIONS DEAL WITH SOCIAL RELATIONSHIPS:

VAR141 Card 3,Col 30,31 How many people from your job at the post office do you get together with outside of work? (if none, enter 0)

|__|__| Number
NR 88

VAR142 Card 3,Col 32 How much can each of the following people be relied on when things get tough at work?

Your immediate supervisor(s)

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

VAR143 Card 3,Col 33 Shop steward or union representative

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

VAR144 Card 3,Col 34 Other people at work

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

VAR145 Card 3,Col 35 Your spouse

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

VAR146 Card 3,Col 36 Your friends

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

VAR147 Card 3,Col 37 Your relatives

Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person	NR
4	3	2	1	0	8

NOW WE WOULD LIKE TO ASK SOME QUESTIONS ABOUT YOUR FINANCIAL SITUATION:

VAR148 Card 3,Col 38-41 What is your household's monthly rent/mortgage payments, including taxes?
Code to nearest dollar
$ |__|__|__|__| NR....8888 NA....9999

VAR149 Card 3,Col 42-46 Aside from any property, about how much money do you owe in total on things like your car, furniture and appliances, loans, credit cards and so on?
Code to nearest dollar
$ |__|__|__|__|__| NR....88888

VAR150 Card 3,Col 47 Do you feel that your total income is enough to meet your (family's) usual monthly expenses and bills?
No..............1
Yes.............2
No Reply........8

VAR151 Card 3,Col 48-52 What was your total personal income in 1982 before taxes?
Code to nearest dollar
$ |__|__|__|__|__| NR....88888

VAR152 Card 3,Col 53-57 If married or living common-law, what was your total family income in 1982 before taxes?
Code to nearest dollar
$ |__|__|__|__|__| NR....88888 NA....99999

THIS SECTION ASKS ABOUT YOUR HEALTH:

In the past twelve months, how healthy have you felt...

VAR153 Card 3,Col 58 physically?

Very Unhealthy						Very Healthy	NR
1	2	3	4	5	6	7	8

VAR154 Card 3,Col 59 mentally?

Very Unhealthy						Very Healthy	NR
1	2	3	4	5	6	7	8

VAR155 Card 3,Col 60,61 During the past 2 weeks, how many days did illness or injury keep you from work for all or most of the day?

|__|__| Days NR....88

VAR156 Card 3,Col 62 In the past 12 months have you ever been disciplined by management for taking sick time?

No..............1
Yes.............2
Not Applicable..9
No Reply,.......8

The next few questions refer to accidents which resulted in an injury that was serious enough to limit your normal activities.

VAR157 Card 3,Col 63,64 During the past 12 months how many accidents of this type did you have? (if none, enter 00 and GO TO QUESTION 53)

|__|__| Number
NR 88

VAR158 Card 3,Col 65,66 How many of these accidents occurred at work? (if none, enter 00)

|__|__| Number

IF 00 in col 63-64, NA 99
NR 88

In the past three months, have you ever experienced any of the following general health problems?

VAR159 Card 3,Col 67 general tiredness

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR160 Card 3,Col 68 loss of appetite

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR161 Card 3,Col 69 irritability

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR162 Card 3,Col 70 sleeplessness

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR163 Card 3,Col 71 dizziness

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR164 Card 3,Col 72 headaches

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

If you have not experienced any of these problems, please go to question 55.

VAR165 Card 3,Col 73 Do you feel your work contributes to any of these health problems?

No..............................1
Yes.............................2
IF ALL 1's ABOVE, NA...........9
No Reply........................8

VAR166 Card 3,Col 74 IF YES, Explain:

Response ______________________________ 3
NR 8
NA 9

Problems in Muscles and Joints

In the past three months, have you ever experienced any of the following problems?

VAR167 Card 3,Col 75 neck, shoulder, arm, elbow, wrist or hand pains

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR168 Card 3,Col 76 back pain

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR169 Card 3,Col 77 leg, knee, ankle or foot pains

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

If you have not experienced any of these problems, please go to question 57.

VAR170 Card 3,Col 78 Do you feel your work contributes to these muscular aches and pains?

No..........................1
Yes.........................2
IF ALL 1's ABOVE. NA.......9
No Reply...................8

VAR171 Card 3,Col 79 IF YES, Explain:

Response ________________________________ 3
NR 8
NA 9

XXXXXXXXXXXXXXXXXXXX CARD 4 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Col 1,4 Questionaire number |_|_|_|_|

Col 5 Card Number |4|

Eye and Vision Problems

VAR172 Card 4,Col 6 In the past three months, have you ever experienced any eye or vision problems?

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

If you have not experienced any of these problems, please go to question 59.

VAR173 Card 4,Col 7 Do you feel your work contributes to any of these eye or vision problems?

No................1
Yes...............2
IF 1 ABOVE, NA....9
No Reply..........8

VAR174 Card 4,Col 8 IF YES, Explain:

Response ________________ 3

NR 8

NA 9

Other Health Problems

In the past three months, have you ever experienced any of the following?

VAR175 Card 4,Col 9 nausea

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR176 Card 4,Col 10 skin rashes

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR177 Card 4,Col 11 memory blanks

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR178 Card 4,Col 12 allergies

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR179 Card 4,Col 13 bladder discomfort

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR180 Card 4,Col 14 hemorrhoids

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR181 Card 4,Col 15 arthritis

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

If you have not experienced any of these problems, please go to question 61.

VAR182 Card 4,Col 16 Do you feel your work contributes to any of these problems?

No..................1
Yes.................2
IF ALL 1's ABOVE....9
No Reply............8

VAR183 Card 4,Col 17 IF YES, Explain:

Response ________________________________ 3
NR 8
NA 9

VAR184 Card 4,Col 18 Have you experienced any loss of hearing?

No..................1
Yes.................2
No Reply............8

VAR185 Card 4,Col 19 IF YES, do you feel your work has contributed to your hearing loss?

No..................1
Yes.................2
IF 1 ABOVE, NA....9
No Reply............8

VAR186 Card 4,Col 20 IF YES, Explain:

Response ________________________________ 3
NR 8
NA 9

Do you feel your overall health has been better, worse, or about the same as a result of

		much worse	slightly worse	about the same	slightly better	much better	NR
VAR187 Card 4,Col 21	the kind of work you do	1	2	3	4	5	8

VAR188 Card 4,Col 22	the hours you work	1	2	3	4	5	8
VAR189 Card 4,Col 23	your general work environment	1	2	3	4	5	8

VAR190 Card 4,Col 24,25 How much sleep would you like to get every 24 hours?

|__|__| Hours NR....88

VAR191 Card 4,Col 26,27 About how much sleep do you actually get during every 24 hours?

|__|__| Hours NR....88

THE FOLLOWING QUESTION SHOULD BE ANSWERED BY BOTH MALES AND FEMALES.

Since you began working at the post office, have you or your spouse experienced any of the following? (circle appropriate responses)

VAR192 Card 4,Col 28	Birth of a normal child	1. No	2. Yes	8. NR
VAR193 Card 4,Col 29	Premature birth	1. No	2. Yes	8. NR
VAR194 Card 4,Col 30	Stillbirth	1. No	2. Yes	8. NR
VAR195 Card 4,Col 31	Birth defects in a child born to you or your spouse	1. No	2. Yes	8. NR
VAR196 Card 4,Col 32	Spontaneous miscarriage	1. No	2. Yes	8. NR
VAR197 Card 4,Col 33	Infertility	1. No	2. Yes	8. NR
VAR198 Card 4,Col 34	Impotence	1. No	2. Yes	8. NR

The following questions concern menstruation and are to be answered by FEMALES ONLY:
(If you are a male, skip to Question 69).

VAR199 Card 4,Col 35 During the past year have you ever had problems with your periods?

No 1
Yes...................... 2
Not Applicable........... 3
No Reply................. 8
Male: Not Applicable 9

If you have not had problems with your periods, please go to question 69.

VAR200 Card 4,Col 36 Do you feel that your work at the post office contributes to these problems?

No..............1
Yes.............2
Not Applicable..9
No Reply........8

VAR201 Card 4,Col 37 IF YES, Explain:

Response ______________________ 3
NR 8
NA 9

The next few questions refer to the use of medicines, pills or ointments in the last week.

Did you take or use any of the following during the last week?

VAR202 Card 4,Col 38 Pain relievers, such as aspirin?

No..............1
Yes.............2
No Reply........8

VAR203 Card 4,Col 39 Tranquilizers, medicine for the nerves or medicine to help you sleep?

No..............1
Yes.............2
No Reply........8

VAR204 Card 4,Col 40 Medicine for the heart or blood pressure?

No..............1
Yes.............2
No Reply........8

VAR205 Card 4,Col 41 Stomach remedies or medicines?

No..............1
Yes.............2
No Reply........8

VAR206 Card 4,Col 42 Skin ointments or salves?

No..............1
Yes.............2
No Reply........8

THE FOLLOWING QUESTIONS ASK ABOUT WORK PRESSURES:

VAR207 Card 4,Col 43 How often do you feel under pressure at work?

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR208 Card 4,Col 44 Generally, how much of a problem is the pressure you experience at work?

No problem						Very Great Problem	NR
1	2	3	4	5	6	7	8

THE NEXT SET OF QUESTIONS DESCRIBES SOME OF THE WAYS PEOPLE FEEL AND BEHAVE AT DIFFERENT TIMES.

How often have you experienced each of these recently:

VAR209 Card 4,Col 45 bothered by things that usually don't bother you.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR210 Card 4,Col 46 felt angry.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR211 Card 4,Col 47 boiled up inside.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR212 Card 4,Col 48 lost temper.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR213 Card 4,Col 49 became angry and stayed angry.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR214 Card 4,Col 50 yelled at people.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR215 Card 4,Col 51 got into fights or arguments.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR216 Card 4,Col 52 didn't feel like eating; appetite was poor.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR217 Card 4,Col 53 couldn't shake off the blues even with help from family or friends.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR218 Card 4,Col 54 felt you were just as good as ot[illegible] people.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR219 Card 4,Col 55 had trouble keeping your mind on what you were doing.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR220 Card 4,Col 56 felt depressed.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR221 Card 4,Col 57 felt that everything you did was an effort.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR222 Card 4,Col 58 felt hopeful about the future.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR223 Card 4,Col 59 thought your life had been a failure.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR224 Card 4,Col 60 felt fearful.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR225 Card 4,Col 61 slept restlessly.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR226 Card 4,Col 62 felt happy.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR227 Card 4,Col 63 talked less than usual.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR228 Card 4,Col 64 felt lonely.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR229 Card 4,Col 65 felt people were unfriendly.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR230 Card 4,Col 66 enjoyed life.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR231 Card 4,Col 67 had crying spells.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR232 Card 4,Col 68 felt sad.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR233 Card 4,Col 69 felt people disliked you.

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

VAR234 Card 4,Col 70 couldn't get "going".

Never	Rarely	Sometimes	Often	Always	NR
1	2	3	4	5	8

AND FINALLY SOME QUESTIONS ABOUT YOUR LIFESTYLE:

VAR235 Card 4,Col 71,72 During a typical week, on approximately how many days do you drink alcoholic beverages? (If you do not drink alcoholic beverages, mark 0 and go to question 76).

|__|__| Days NR....88

On those days when you do drink, about how many of the following, on the average, do you usually drink:

VAR236 Card 4,Col 73,74 Bottles of beer |_|_| Bottles IF 00 FOR VAR235, CODE NA....99 NR....88

VAR237 Card 4,Col 75,76 Glasses of wine |_|_| Glasses IF 00 FOR VAR235, CODE NA....99 NR....88

VAR238 Card 4,Col 77,78 Shots of liquor (shot = 1 1/2 oz.) |_|_| Shots IF 00 FOR VAR235, CODE NA....99 NR....88

VAR239 Card 4,Col 79 Would you say that drinking:
- helps you cope with your job 1
- makes it harder for you to cope with your job.......... 2
- has no effect on how you cope with your job 3
- If non-drinker code, NA 9
- NR 8

XXXXXXXXXXXXXXXXXXXX CARD 5 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

VAR240 Col 1,4 Questionaire number |_|_|_|_|

Col 5 Card Number |5|

VAR241 Card 5,Col 6,7 On an average day, how many cigarettes do you smoke?
(If you don't smoke, mark 0 and go to question 78).

|__|__| Cigarettes NR....88

VAR242 Card 5,Col 8 Would you say that smoking:
- helps you cope with your job 1
- makes it harder for you to cope with your job.......... 2
- has no effect on how you cope with your job 3
- If non-smoker code, NA 9
- NR 8

VAR243 Card 5,Col 9,10 On an average day, how many cups of tea, coffee, and/or cola do you drink?
(If none, mark 0 and go to question 80).

|__|__| Cups NR....88

VAR244 Card 5,Col 11 Would you say that drinking tea, coffee, and/or cola:
- helps you cope with your job 1
- makes it harder for you to cope with your job.......... 2
- has no effect on how you cope with your job 3
- If non-drinker code, NA 9
- NR 8

VAR245 Card 5,Col 12,13 During a typical week, on approximatey how many days do you use mood altering drugs (such as valium or marijuana)? (If none, mark 0 and go to question 82).

|__|__| Days NR......88

VAR246 Card 5,Col 14 Would you say that using mood altering drugs:

helps you cope with your job	1
makes it harder for you to cope with your job	2
has no effect on how you cope with your job	3
If non-user code, NA	9
NR	8

In the last week in your non-working hours how many times have you done light, moderate, or heavy exercise. (If none, mark 0).

VAR247 Card 5,Col 15,16 light exercise .... |__|__| Times
NR 88

(e.g. Bowling, short walks, yoga, etc.)

VAR248 Card 5,Col 17,18 Moderate exercise .... |__|__| Times
NR 88

(e.g. Brisk walks, volleyball, snow shovelling, weight lifting, etc.)

VAR249 Card 5,Col 19,20 Heavy exercise .... |__|__| Times
NR 88

(e.g., Swimming laps, jogging/running, basketball, racquetball, skiing, etc.)